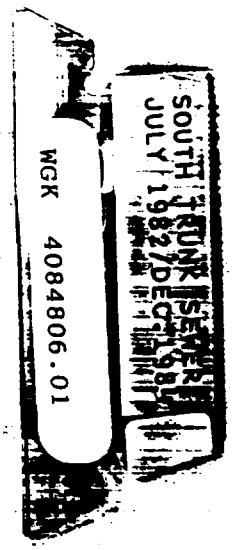
161710

30

Construction of new sewer system 1982 - 1984



MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: December 21, 1984

Subj: Project Progress Meetings

Re: CEA 3808 - Main South Trunk Sewer

TO:

T.N. Carrico	1740*
L.N. DeWald	1740*
W.C. Koester	Alberici*
K.W. Lichtenheld	CS6G*
C.J. Lotz	Alberici*
R.L. Nelson	1740*
K.W. Petterson	1740*
O.N. Shipley	1740
T.W. Wright	CS6G

cc:

D.R. Bowers	CS6G
L.V. Bumbicka	1740
R.M. Calles	CS6G
M.A. Coco	Alberici
E.R. Hartman	CS6G
P.R. Hoemann	1740
L.C. Kreh	F2ED
F.A. Mayse	CS6G
R.J. Murphy	1740
R.L. Wiese	CS6G

*Present at meetings

Following are minutes of the meetings held at the CED construction trailers on 12/13/84 and 12/20/84 at 9:00 a.m.

1. Construction Progress

a. As scheduled, the railroad tracks east of ACL were ready for use on 12/12/84. Chlorine cars used the tracks immediately. Construction/Alberici did a good job.

b. Manholes 1-BB and 1-CC have been poured. The forms on 1-CC will be stripped on 12/26/84.

c. Additional trench has been excavated and additional sections of the concrete base pad have been poured.

d. Portions of the trench have been covered with moveable frames covered with plastic so that temperature requirements can be maintained in the trench while the furan pipe joints are curing.

e. The first VCP mortar joints will be made starting 12/26/84.

f. Moveable electric carts, which will be used to get power to the heaters in the trench, are ready.

g. CED has moved materials out of one side of the fab shop. A partition is being installed. The shop will be heated so that the VCP pipe can be stored in a controlled temperature & weather environment prior to installation in the trench.

h. Alberici has built a jig to allow the best possible fitup of adjoining pipe sections preparatory to installation in the trench.

WGK 4084807

2. VCP Joint Materials

The 42" pipe test joints have been sectioned and reviewed. In general they looked good, but showed porosity in some areas. To insure minimal porosity, a ceramic rope will be used to compress the furan material after each pass.

The joint procedure has been reviewed by Nelson and Lichtenheld and is ready for use.

3. BBW Access

Rail tracks east of BBW to be back in service by 02/01/85.

4. Storage West of ACL

Resolution as to how to handle the tank trucks and tank cars west of ACL must be made by the plant in the next two weeks when access is cut off - Nelson. These cars hold caustic and sulfur dioxide.

5. Acid Brick Drawings

These drawings have been reviewed by CED/plant and returned to Alberici with comments.

Acid brick installation discussions and seminars will be held in January to teach and train all involved personnel on the proper steps which must be taken to correctly install the acid brick.

Shipley's convalescence is coming along fine.

The next progress meeting will be held at the CED construction trailers at 9:00 a.m. on Thursday, January 3, 1985.

Gordon

Gordon A. Grundmann

mb/2178z

WGK 4084808

Monsanto

FROM (NAME—LOCATION—PHONE): T. Carrico, Ext. 2095

DATE: December 21, 1984

SUBJECT: Status Report on CEA 3808

REFERENCE:

TO: P. Hoemann

cc: L. Bumbicka
K. Lichtenheld — CS6G
R. Murphy
R. Nelson
O. Shipley
L. Dewald

Road plates are back in at chlorine tracks 8E and F. Fifth Street has been opened up temporarily on south side of ACL.

Manhole 1CC was poured on December 20, 1984. Forms will be stripped on December 26, 1984.

Encasement bed will be poured next week east to area 30 feet into "I" Street.

Sewer tile in excavation for first joints. Heaters and trench covers in place. Weather has forced delay of joint work until December 26, 1984.

Tom Carrico
Operation Foreman

skg

WGK 4084809

Monsanto

FROM (NAME—LOCATION—PHONE) T. Carrico, Ext. 2095

DATE December 17, 1984

SUBJECT Status Report on CEA 3808

REFERENCE

TO : P. Hoemann

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley
L. Dewald

Culvert is in place at ACL tracks.

Kelly is in process of putting the road plates back in so road can be opened up.

Manhole 1-CC being formed for pouring of walls later this week.

Expect to get some sewer tile in the hole Thursday or Friday of this week. Heaters and other needed equipment on way to job site.

Tom Carrico
Operation Foreman

skg

WGK 4084810

Monsanto

FROM (NAME—LOCATION—PHONE) T. Carrico, Ext. 2095

DATE : December 10, 1984

SUBJECT : Status Report on CEA 3808

REFERENCE :

TO : P. Hoemann

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley
L. Dewald

Culvert is in at chlorine tracks 8E and 8F. Worked overtime over the weekend to get necessary compaction around and over culvert.

Because of damage to the fire main in the area of the culvert, new 12" pipe is being placed under the tracks to facilitate relocation and tie-ins at a later date.

Kelly will be on site to put tracks back in place today and tomorrow at ACL department.

Manhole 1BB will be poured today. Expect to form and pour 1CC and the balance of the tile base for the first 300 feet next Monday.

Tom Carrico
Tom Carrico
Operation Foreman

skg

WGK 4084811

IN-1120

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: December 6, 1984

Subj: Project Progress Meeting

Re: CEA 3808 - Main South Trunk Sewer

TO:

T.N.	Carrico	1740*
L.N.	DeWald	1740*
W.C.	Koester	Alberici*
K.W.	Lichtenheld	CS6G*
C.J.	Lotz	Alberici*
R.L.	Nelson	1740*
K.W.	Petterson	1740*
O.N.	Shipley	1740
T.W.	Wright	CS6G

cc:

D.R.	Bowers	CS6G
L.V.	Bumbicka	1740
R.M.	Calles	CS6G
M.A.	Coco	Alberici
E.R.	Hartman	CS6G
P.R.	Hoemann	1740
L.C.	Kreh	F2ED
F.A.	Mayse	CS6G
R.J.	Murphy	1740
R.L.	Wiese	CS6G

*Present at meeting

Following are minutes of the meeting held at the CED construction trailers on 12/06/84 at 9:00 a.m.

1. Construction Progress

   a. The concrete walls of MH 1-AA have been poured and the forms stripped. The forms are being placed for the walls of the MH 1-BB and concrete should be poured by Monday, 12/10. The base for MH 1-CC has been poured.

   b. Twenty-one pieces of 42" VCP pipe are at the site including the first two short lengths that are placed between the end sewer inlet box and the first manhole (1-AA).

   c. Preparatory steps leading up to making the first VCP mortar joint are about to begin. They include checkout of heating capability in the trench, placement of tents, etc. The first joints will probably be made in a couple of weeks.

2. ACL Railroad Track Access

   Piling has been driven and the trench has been excavated. The 9' diameter corrugated pipe is scheduled to be set in the trench today. Back-filling will start immediately.

   Reinstallation of the railroad tracks will begin Monday, 12/10, to insure the chlorine cars can use the tracks on 12/12/84.

3. VCP Joint Material

WGK 4084812

   Sectioning of the 42" pipe test joints is almost complete and ready for review.

Nelson and Lichtenheld are in the process of revising the joint installation procedure, but need to meet with Jim Imrie of Pennwalt to clairfy some steps.

4. BBZ Access

Materials have been ordered and the modification work will be accomplished as required, probably early next year.

5. BBW Access

The railroad tracks east of BBW are estimated to be back in service on 02/01/84. The main ramp access will be available about mid-March. These times have been cleared with Manufacturing.

6. Acid Brick Drawings

Drawings for review have been received from Fleischer-Seeger covering the acid brick installation details.

7. Pre-installation Storage of VCP Pipe

The CED warehouse is not usable and needs to be torn down by 02/01/84. The CED fab shop, however, will be suitable for storage of the VCP prior to installation in the trench. When the sewer line reaches the fab shop, a portion of it must be torn down. It may still be possible to maintain the south portion of the shop for pipe storage until the project is completed. A final decision will be made later.

Shipley's recovery from his operation is coming along fine.

The next progress meeting will be held at the CED construction trailers at 9:00 a.m. on Thursday, December 13, 1984.

Gordon

Gordon A. Grundmann

mb/2033Z

WGK 4084813

Monsanto

FROM (NAME—LOCATION—PHONE): R. L. Nelson, Sauget, Illinois

DATE: December 6, 1984

SUBJECT: South Trunk Sewer Project

REFERENCE:

TO: J. Smith

cc: D. Mayer
L. Dewald
T. Carrico
L. Bumbicka

This memo confirms our recent discussion on the disruption created by the South Trunk Sewer project at Bldg. BBW.

The dock facilities at the south end of Bldg. BBW will be out of service until March 1, 1985. Track 8C will be out of service until February 1, 1985. These dates are based on present and expected future conditions. Any significant changes will be discussed with you.

The Contractor and CED will make every effort to better these dates where possible.

Should circumstances change and you so desire, we can provide temporary access to the South Dock by using crane mats to span the excavation.

The project team appreciates your cooperation in this matter.

R. L. Nelson

R. L. Nelson

sms

WGK 4084814

IN-1120

Monsanto

FROM (NAME—LOCATION—PHONE) T. Carrico, Ext. 2095

DATE : December 3, 1984

SUBJECT : Status Report on CEA 3808

REFERENCE :

TO : P. Hoemann

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley
L. Dewald

Soldier piling in on second 300 feet south of ACL Department.

Excavation underway for culvert at ACL chlorine tracks 8E and 8F. Expect to set culvert Wednesday, December 5, 1984.

Second truck of sewer tile on job site November 30, 1984.

Manhole 1AA poured November 30, 1984.

Excavation completed at 1CC. Expect to form and pour base on Tuesday, December 4, 1984.

Tom Carrico
Tom Carrico
Operation Foreman

skg

WGK 4084815

IN-1120

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: November 29, 1984

Subj: Project Progress Meeting

Re: CEA 3808 - Main South Trunk Sewer

TO:

T.N. Carrico	1740*
L.N. DeWald	1740*
W.C. Koester	Alberici
K.W. Lichtenheld	CS6G*
C.J. Lotz	Alberici*
R.L. Nelson	1740
K.W. Petterson	1740*
O.N. Shipley	1740
T.W. Wright	CS6G

cc:

D.R. Bowers	CS6G
L.V. Bumbicka	1740
R.M. Calles	CS6G
M.A. Coco	Alberici
E.R. Hartman	CS6G
P.R. Hoemann	1740
L.C. Kreh	F2ED
F.A. Mayse	CS6G
R.J. Murphy	1740
R.L. Wiese	CS6G

Following are minutes of the meeting held at the CED construction trailers on 11/29/84 at 9:00 a.m.

1. Construction Progress

   a. Approximately 500' of piling has been driven and 200' of trench has been excavated.

   b. The concrete bases have been poured for manholes 1-AA and 1-BB. The walls for MH 1-AA are being formed and will be poured 11/30/84.

   c. Portions of the concrete base pad for the 42" diameter pipe have been poured. The first pipe lengths are targeted for placement on the pad the week of 12/03/84.

   d. Updated Monsanto drawings were issued on 11/20/84.

2. ACL Railroad Track Access

   The ACL shutdown began on 11/26/84. The tracks have been removed across 5th Street and piling is being driven. Excavation should start 11/30/84.

   The 9-foot diameter corrugated pipe is on site.

   In order to meet planned plant commitments for chlorine railroad car deliveries, the railroad tracks across 5th Street must be back in place by 12/12/84.

WGK 4084816

3. VCP Joint Material

   The 42" pipe test joint made at the Alberici shop was hydro tested at 10 psig without leakage. The joint is now being sectioned for review.

   A preliminary mortar joint installation procedure has been written by Jim Imrie who represents the Pennwalt Corporation. Nelson and Lichtenheld will revise and issue this procedure by 12/05/84 for use on this project.

4. BBZ Access

   The items which must be accomplished to allow operation of the BBZ facility during construction have been discussed by DeWald, Lotz and Donahue prior to implementation. PCN #9 was written to cover this work.

5. A meeting was held with the Village of Sauget personnel to discuss the sewer design details relating to the management of flow. All design was verified as being satisfactory. Present at the meeting were C. Crain, R. Nelson, S. Smith and E. Heumann (Environmental Control), K. Lichtenheld, and two Village people who are responsible for flow management.

6. The existing CED warehouse and fab shop may be acceptable for storage of VCP pipe to keep it weather protected and at the proper temperature prior to installation. Nelson to review this concept with plant personnel to verify that the land on which these structures stand is not needed during the life of this project.

Ken Petterson is assisting Lenny DeWald during Shipley's absence. His extension is 2166.

Shipley is at home recovering from his operation. He did, however, visit the site briefly on 11/28/84.

Attached is a copy of the 11/28/84 issue of "WGK TODAY". This project is highlighted on the first page.

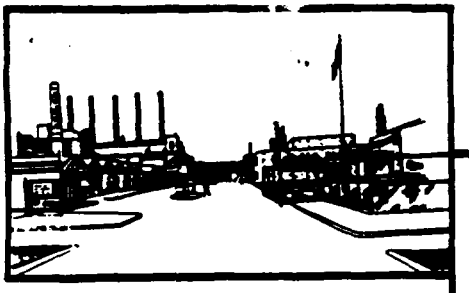
The next progress meeting will be held at the CED Construction trailers at 9:00 a.m. on Thursday, December 6, 1984.

Gordon

Gordon A. Grundmann

mb/1937Z

Attachment (to CED and Alberici personnel only).



WGK TODAY

...a publication of the Wm. G. Krummrich Plant
...Monsanto Industrial Chemicals Co.

WEDNESDAY, NOVEMBER 28, 1984

MAKING THINGS HAPPEN AT KRUMMRICH...

DICK NELSON (FOREGROUND) POINTS AT AN ITEM OF INTEREST IN THE SEWER WORK; THE PROJECT WILL ENTAIL MOVING TONS OF DIRT.

ANOTHER KRUMMRICH PLANT PROJECT IN PROGRESS THROUGH THE DESIGN AND TECHNICAL GUIDANCE OF THE WGK PLANTWIDE DESIGN GROUP IS ONE TO REPLACE TWO "ORIGINAL" SEWERS OF 50+ YEAR VINTAGE WITH A NEW MONSANTO TRUNK SEWER. THIS NEW 42" VCP CONCRETE ENCASED TRUNK SEWER MAIN WILL COLLECT ALL KRUMMRICH EFFLUENTS INTO A SINGLE SEWER, WITH ONE CONNECTION TO THE VILLAGE SEWER SYSTEM, SIMPLIFYING PRESENT AND FUTURE MONITORING AND REDUCING REGULATORY LIABILITY.

TSD ENGINEERING SPECIALIST DICK NELSON IS THE PLANTWIDE DESIGN PERSON AT THE HELM FROM DESIGN THROUGH COMPLETION OF THE SEWER TRUNK JOB. AS MANUFACTURING REPRESENTATIVE, DICK MUST SEE THAT ALL RUNS SMOOTHLY BETWEEN PLANT FUNCTIONS AND CED (WHO IS PERFORMING THE ACTUAL WORK). AN INNOVATION IN CONJUNCTION WITH THIS PROJECT IS THE DEVELOPMENT, BY DICK AND REPRESENTATIVES OF PENNWALT OF ST. LOUIS, OF A CHEMICAL RESISTANT ASBESTOS-FREE JOINT FOR SEWER CONSTRUCTION. THIS MATERIAL WILL BECOME A PLANT STANDARD FOR FUTURE SEWER PIPING.

THE TRUNK SEWER LINE IS SLATED FOR COMPLETION IN 1986. WGK 4084818

COMMENT

I KNOW YOUR COMMENTS AREN'T USUALLY POSITIVE, THEY'RE USUALLY GRIPES AND COMPLAINTS...BUT, I FOR ONE, WOULD LIKE TO SAY "THANKS" FOR THE SAFETY JACKET I WAS GIVEN. IT IS REALLY NICE AND I DO APPRECIATE GETTING IT. I KNOW OF OTHERS WHO THINK THIS TOO, BUT I DOUBT IF ANYONE TAKES THE TIME TO EXPRESS IT. I GUESS MOST OF US TEND TO TAKE THE THINGS MONSANTO DOES FOR US FOR GRANTED, BUT IF WE LOOK AROUND US, WE'RE PRETTY LUCKY.

cc: W. Small
J. McQueary
→ L. Bumbicka

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: December 3, 1984 cc: K.W. Lichtenheld
F.A. Mayse

Subj: Sewer Back-up Study

Re: CEA 3808 - Main South Trunk Sewer

TO: **R.L. Nelson - 1740**

Discussions have been held in the past regarding a study being made to determine the effects of a possible back-up of water, etc., into the plant from the south trunk sewer during a very heavy rainstorm.

This kind of a study is not a part of the project scope and is not planned to be executed at this time. It is possible that a study of this nature could be accomplished if a Project Scope/Premises variance covering this concept were to be approved by the MIC Operating Company management personnel.

This memo is written confirmation that the above information has been previously communicated to you.

Gordon Grundmann
Gordon A. Grundmann

mb/1950Z

WGK 4084819

Monsanto

FROM (NAME—LOCATION—PHONE): T. Carrico, Ext. 2095

DATE : November 27, 1984

SUBJECT : Status Report on CEA 3808

REFERENCE :

TO : P. Hoemann

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley
L. Dewald

Bases for 1AA and 1BB have been poured.

Forming to pour sewer tile base up to 1BB today.

Kelly has taken tracks 8B, 8C, 8D, 8E and 8F out of service on the north side of 5th Street.

Soldier piling started on second 300 feet south of ACL Department set at grade temporarily.

Work proceeding to get 9' culvert in during ACL turnaround. Tracks 8E and 8F have to be back in service on December 12, 1984.

Tom Carrico
Operation Foreman

skg

MGK 4084820

IN-1120

Monsanto

FROM
(NAME—LOCATION—PHONE) T. Carrico, Ext. 2095

DATE : November 19, 1984

SUBJECT : Status Report on CEA 3808

REFERENCE :

TO : P. Hoemann

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley
L. Dewald

Excavation work very close to being completed east through box 1CC on project.

Compaction and forming in progress for concrete pouring tomorrow.

Tracks 8B, 8C and 8D taken out of service on north side of 5th street as of today.

To begin driving soldier piling south of ACL Department today.

Tom Carrico
Operation Foreman

skg

WGK 4084821

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: November 16, 1984

Subj: Project Progress Meeting

Re: CEA 3808 - Main South Trunk Sewer

TO:

T.N.	Carrico	1740*
W.C.	Koester	Alberici*
K.W.	Lichtenheld	CS6G*
C.J.	Lotz	Alberici*
R.L.	Nelson	1740*
O.N.	Shipley	1740
T.W.	Wright	CS6G

cc:

D.R.	Bowers	CS6G
L.V.	Bumbicka	1740
R.M.	Calles	CS6G
M.A.	Coco	Alberici
L.	DeWald	1740*
E.R.	Hartman	CS6G
P.R.	Hoemann	1740
L.C.	Kreh	F2ED
F.A.	Mayse	CS6G
R.J.	Murphy	1740
R.L.	Wiese	CS6G

* Present at meeting

Following are minutes of the meeting held at the CED construction trailers on 11/15/84 at 9:00 a.m.

1. Construction Progress

   a. Approximately 130' of trench has been excavated. The soil removed in this area is free of contamination and will be reused in the trench provided proper compaction can be achieved.

   b. Monsanto drawings are being updated to reflect the new flow line elevations, elimination of lateral box 1-HH, the relocation of lateral box 1-JJ, etc. Revision work will be completed the week of 11/19/84, and drawings will be reissued.

   c Alberici will begin checking the lateral flow line elevations the week of 11/19/84.

2. 42" Diameter VC Pipe

   Lichtenheld and Nelson witnessed the hydrostatic testing of the 42" pipe at the vendor's shop. The test setup and results were satisfactory.

3. VCP Joint Material

   The installation tests for the joint mortar on 42" pipe were made at the Alberici shop on 11/05/84. Hydrostatic testing of the joint is scheduled for the week of 11/19/84. Then the pipe will be sectioned to view the results.

   Lichtenheld and Nelson to write a mortar joint installation procedure.

The first field joints will probably be made the week of 11/26/84.

4. ACL Railroad Track Access

The 9-foot diameter corrugated pipe under the railroad tracks will be implemented during the ACL shutdown starting 11/26/84. The corrugated pipe is due at the site 11/16/84.

Alberici will start driving pile by 11/19/84 in the railroad track area.

Nelson to coordinate these activities with manufacturing to avoid interruptions.

5. BBZ Access

Barney Donahue has issued a memo dated 11/08/84 outlining the items which are needed to maintain operation of the BBZ facility while construction is occurring on the south end of this warehouse.

6. Heating of Pipe/Trench and Electrical Power

Various ideas to heat the pipe and surrounding area during the 42" VCP installation were discussed. Alberici plans to purchase electric radiant heaters with blowers which would be in operation around the clock during curing, etc. Nelson to verify that this poses no safety problems.

Electrical power is required for these blowers and/or other items in the trench. Alberici plans to use moveable carts for 110 volt and 440 volt electrical power capability along the trench. Power to the carts is probably available at the dewatering pump racks. Crain to verify.

7. BBW Tracks

The railroad tracks to BBW are targeted to be cut off the week of 11/19/84. The cut off time is estimated to be 5-weeks. Nelson to advise manufacturing of this access restriction.

8. Trucks delivering to the site need to stop by CED receiving for check-in verification.

9. Manhole 3-BB will be moved slightly east to avoid the existing conflict with dewatering well #14.

Chris Corcoran will be assigned to the site to act as field accountant.

WGK 4084823

Owen Shipley is recovering from surgery. Lenny DeWald is acting as construction engineer on this project until Ship's return.

The next progress meeting will be held at the CED construction trailers at 9:00 a.m. on Thursday, November 29, 1984.

Gordon

Gordon A. Grundmann

mb

Monsanto

FROM
(NAME—LOCATION—PHONE) T. Carrico, Ext. 2095

DATE : November 9, 1984

SUBJECT : Status Report on CEA 3808

REFERENCE :

TO : P. Hoemann

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

Green panel demonstration at Alberici's paint shop inconclusive.

Cribbing and excavation continuing toward Box 1-CC.

Thirteen pieces of 42" sewer pipe have been sand blasted in lot north of BI on spigot and bell end to facilitate bonding.

Tail pipe put on #4 dewatering pump discharge to make sewer box in ACL yard safer November 8.

Carpenters to start forming for slab on first 200 feet today.

Two trailers on site north of BI to become part of fitting and storage shop.

Tom Carrico
Tom Carrico
Operation Foreman

skg

WGK 4084825

IN-1120

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: November 2, 1984

Subj: Project Progress Meeting

Re: CEA 3808 - Main South Trunk Sewer

TO:

W.	Bodine	Alberici*
T.N.	Carrico	1740*
W.C.	Koester	Alberici*
K.W.	Lichtenheld	CS6G
C.J.	Lotz	Alberici*
R.L.	Nelson	1740*
O.N.	Shipley	1740*
T.W.	Wright	CS6G

cc:

D.R.	Bowers	CS6G
L.V.	Bumbicka	1740
R.M.	Calles	CS6G
M.A.	Coco	Alberici
E.R.	Hartman	CS6G
P.R.	Hoemann	1740
L.C.	Kreh	F2ED
F.A.	Mayse	CS6G*
R.J.	Murphy	1740
R.L.	Wiese	CS6G

* Present at meeting

Following are minutes of the meetings held at the CED construction trailers on 10/25/84 and 11/01/84 at 9:00 a.m. The minutes for the 10/25 meeting were written by Ken Lichtenheld and have been supplemented with additional information discussed at the 11/01 meeting.

1. Construction Progress

a. Elevation check.

(1) Alberici is checking the lateral flow line elevations to insure that they will flow into the main sewer line at the proper elevations.

(2) Lichtenheld has established new flow line elevations for the manholes. This was necessary due to incorrect as-built drawing information on the Village Box at Rt. 3. This information has been given verbally to Alberici. Drawings are being revised and will be re-issued on November 9, or earlier. Lichtenheld to issue letter to Alberici.

(3) Due to the decrease in the slope of the line, the sewer capacity has been reduced about 5% as follows:

	Slope	Capacity
Contract drawings	0.00125	15,900 gpm
Revised drawings	0.00113	15,034 gpm

b. Work on the relocation of the benzene line was completed on schedule (Friday, October 19, 1984). Backfilling of trench remains to be completed.

WGK 4084826

c. Driving of soldier piles has been started. The piles have been driven for the first 200-feet of the routing. Excavation has started.

d. Results of the soil testing for contamination need to be expedited. Nelson to follow-up.

2. 42" Diameter VC Pipe Delivery

a. Hydrostatic testing of pipe was started on 10/24. Approximately five pipes can be tested per day. The manufacturer will test additional pipe on a second shift if delivery requirements demand. Thirteen pieces of pipe have been received at the site.

b. Nelson & Lichtenheld will probably make a trip to the VCP manufacturer to observe the hydrostatic testing. (week of 11/05.

c. Alberici will pre-fit VCP and mark for best fit of spigot in bell prior to installation in trench.

d. Alberici will erect a protective covering for approximately 10 pipes. This will insure clean, dry pipe prior to installation in the sewer.

e. VCP manufacturer has letter of 10/15/84 by Lichtenheld indicating no cracks or chips will be allowed in VCP. Project specifications are to be strictly followed.

3. VCP Joint Material

a. Pennwalts green panel mortar with ceramic fibers is approved by the plant and design for the VCP joint material. This material is approved for the initial, caulking, and back joint. The spigot and bell are to be primed with furan prior to buttering. The method and number of passes to make a joint is undetermined at this time. This will be incorporated in the Pennwalt show and tell by using four different methods of placing the mortar.

The test will be performed at Alberici's shop at 2150 Kienlen at 1:00 p.m. on Monday, November 5, 1984.

b. The test on a pipe joint using Atlas material is off due to the commitment on the Pennwalt material.

4. ACL Railroad Track Access

   a. Plant safety review on using remote railroad cars for chlorine storage was not completed. Preliminary cost estimates on this option indicate a cost of over $80k. Also, a great risk of an ACL leak is present.

   b. Alberici has developed costs on using a 9-foot diameter corrugated pipe installed in an open cut. The pipe would be approximately 40-foot in length. The cost for this work is estimated at $26k. Employing this method will allow the 42" VCP to be installed at any time. The estimated cost includes only additional excavation, backfill, concrete, etc., resulting from this construction technique.

      The plant prefers this method of construction over others considered.

   c. The ACL shutdown is still scheduled to start 11/28/84.

5. Lateral box 1-HH has been eliminated from the project. Grundmann to write letter. Box 1-JJ must be moved to the east across the tracks so that it can be installed without interfering with the railroad tracks. Lichtenheld to furnish relocation information to Alberici.

6. A PCN has been written eliminating the sales tax from the project since Monsanto's tax department has ruled that this project is tax exempt for environmental reasons.

7. Nelson is still working with the BBZ manufacturing people to determine their access needs during the construction period. ACL will be able to use docks on the east side on a temporary basis. Some temporary modifications must be made.

   One access crossing may be needed at the south end for truck traffic.

8. Well #14 appears to interfere with the proposed location of manhole 3-BB. Lichtenheld to review.

9. Schedule. The primary effort initially is to concentrate on the 42" pipe installation. The timing for installation of the lateral lines and tie in work needs to be planned.

Gordon Grundmann

mb/1653Z

WGK 4084828

Monsanto

FROM (NAME—LOCATION—PHONE) T. Carrico, Ext. 2095

DATE November 5, 1984

SUBJECT Status Report on CEA 3808

REFERENCE

TO : P. Hoemann

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

A meeting was held on November 1 with Alberici representatives present.

Fourteen pieces of pipe were received this week from Dickey. One piece was rejected and returned to supplier.

All soldier piling in through Box 1-CC. Some cribbing is in place and excavating work started.

Thrust block poured for fire main east of ACL chlorine tracks south side of PIV identified as H L-20.

A demonstration of different ways to apply the green panel joint is planned at Alberici's facility today at 1:00 p.m.

Tom Carrico
Operation Foreman

skg

WGK 4084829

Monsanto

FROM (NAME—LOCATION—PHONE): T. Carrico, Ext. 2095

DATE: October 29, 1984

SUBJECT: Status Report on CEA 3808

REFERENCE:

TO: P. Hoemann

cc. L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

A meeting was held on October 25 with Alberici representatives present.

The Penwalt test joint was acceptable.

The contractor is to advise Dickey, the pipe supplier, to start shipping.

The plan for the chlorine tracks at ACL will be to use a 9' diameter corrugated culvert concrete filled after the test.

Soldier piling and preliminary work on 1AA, 1BB and 1CC continuing south of BBW.

Revised drawings will be issued in two to three weeks, reflecting new elevations and changes in some laterals.

A field test of different ways to complete a joint is being planned at Alberici's facility this week.

Tom Carrico
Operation Foreman

skg

WGK 4084830

Monsanto

FROM (NAME—LOCATION—PHONE): T. Carrico, Ext. 2095

DATE: October 22, 1984

SUBJECT: Status Report on CEA 3808

REFERENCE:

TO: P. Hoemann

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

Meeting was held on October 18 with Alberici representatives present.

The hydotest preformed on the Penwalt joint was acceptable and an inspection of a cut away of the joint is scheduled before final approval.

The six inch benzene transfer line was changed as planned on October 19, 1984 without any major problems - backfilling started.

As-built of relocation completed and a copy will be given to Kevin McCrory.

Work to begin on box 1-CC and soldier piling to be driven west toward box 1-BB this week.

Invert elevations on design were checked. Design 3.01 actual was 2.40.

Sewer tile expected in two to three weeks.

Tom Carrico
Tom Carrico
Operation Foreman

skg

WGK 4084831

N 1120

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: October 18, 1984

Subj: Project Progress Meeting

Re: CEA 3808 - Main South Trunk Sewer

TO:

T.N. Carrico	1740*
W.C. Koester	Alberici*
K.W. Lichtenheld	CS6G*
C.J. Lotz	Alberici*
R.L. Nelson	1740*
O.N. Shipley	1740*
T.W. Wright	CS6G*

cc:

D.R. Bowers	CS6G
L.V. Bumbicka	1740
R.M. Calles	CS6G
M.A. Coco	Alberici
E.R. Hartman	CS6G
P.R. Hoemann	1740
L.C. Kreh	F2ED
F.A. Mayse	CS6G*
R.J. Murphy	1740
R.L. Wiese	CS6G

*Present at meeting

Following are minutes of the meeting held at the CED construction trailers on 10/18/84 at 9:00 a.m.

1. Construction Progress

   a. The elevation was checked on the 42" stub outlet on the sewer inlet box near Highway 3, and it has been found to be higher than recorded on plant drawings. As a result, the elevation drop on the entire sewer was checked. Results indicate that the total sewer slope has been reduced from 3.01 feet to 2.4 feet. The benchmarks were double-checked and are okay. As a result, two items need to be accomplished:

      (1) Alberici is to check the lateral flow line elevations to insure that they will flow into the main sewer line at proper elevations.

      (2) Lichtenheld to establish new elevations for the manholes.

   b. Work continues on relocation of the benzene line. All materials are on site and the work is scheduled to be completed by Friday, October 19, 1984.

   c. Alberici has cut much of the pavement in the first several hundred feet of the job preparatory to excavation.

   d. Alberici plans to start driving piling on Monday, October 22, 1984.

2. 42" VCP Pipe Delivery

   The pipe vendor is proceeding with hydrostatic testing of this pipe. Pipe is expected on the site by the second week in November.

WGK 4084832

3. 42" VCP Pipe Joint Material Testing

The test joint of 42" VCP pipe has been hydro tested at about 6 psig and is being sectioned in multiple pieces for review by 10/22/84. No leakage occurred at the joint. A dye was also placed in the water and showed no leakage on the outside from a black light.

Three joint options are possible:

	Initial Joint	Caulking	Back Joint
a.	Furan mortar	Furan resin w/fibers	Sulfur
b.	Furan mortar	Furan resin w/fibers	Epoxy
c.	Furan mortar	Furan resin w/fibers	Furan resin w/fibers

Results of the joint test will provide data to assist in finalizing the materials to be used in these joints.

A test of another caulking material with another possible vendor is scheduled for 10/23/84.

4. ACL Railroad Track Access

Four ideas have been proposed to maintain continued rail access to ACL during a 3-month construction period:

a. Build 3 trestles (approx. $40k each). This option is costly and shutdown dependent. Some engineering work is still required.

b. Extend spur tracks to the north to tie into another mainline track. Involves interferences with pipe supports and fire mains. Track work is approx. $51k. Including all work, this option could cost $100k.

c. Plan to use 2-4 railroad cars for chlorine storage and pipe new material to these cars from a temporary unloading station located to the east or south. Nelson to review with safety and environmental for acceptability. Appears to be the best option.

d. Build a corrugated arch tunnel under tracks (approx. 50-feet long). Alberici to do some layout to determine feasibility and estimated cost of this concept.

The ACL shutdown is currently scheduled for 11/26/84 to 12/25/84. A decision is required as soon as possible. Construction would plan to do the work in a 2-week time period to insure no interference with ACL production.

5. Nelson to review the possibility of either eliminating or moving lateral boxes 1-HH and 1-JJ. Alberici has ordered materials. Decision needed quickly.

6. Alberici to advise Nelson approximately one-month in advance of the time that the BI bays need to be removed and the telephone pole relocated.

7. Nelson to review with production the needs for access to Building BBZ. If truck access is needed, the piling will be driven flush with the ground at access points (instead of one-foot above the ground).

8. Schedule

   Alberici furnished a revised schedule with refinements and spread out on the computer sheet which makes it very readable. This schedule appears to be satisfactory.

9. Attached is a copy of the Safety and Health Plan dated 10/25/84.

The next progress meeting will be held at the construction trailers at 9:00 a.m. on Thursday, October 25, 1984.

Gordon Grundmann

Gordon Grundmann

mb/1493Z
Attachment

WGK 4084834

SAFETY AND HEALTH PLAN
CEA 3808

SCOPE

The following sets forth safety and occupational health considerations for personnel involved with installing the South Trunk sewer. These are not all inclusive and may be expanded in the future to better assist site management in consistently dealing with health and safety questions that arise. The guides cannot be expected to cover every situation but provide a framework within which sound field decisions can be made.

OBJECTIVE

It is the intent of Monsanto/WGK to show proper concern for employee health and safety in the execution of contract work. WGK is striving for continued improvement in health and safety performance in all facets of manufacturing operations; poor safety practice and disregard of worker safety and health by contractors working on company property will detract from that goal. The management at the WGK site expects in its relations with contract service companies that work performed on our property will not only be of high quality but will also be done in a safe and healthful manner.

PROCEDURES

WGK 4084835

1. Once the need for contractor services is determined, the person

requesting services should consult the site safety and health professionals to define those safety/health requirements called for to properly execute the work. (i.e. what is expected of the contractor and Monsanto.)

Such requirements should be reviewed with the prospective contractor(s) prior to bidding and be incorporated into the written contract. Provision for the following items must be considered:

- o RESPIRATORY PROTECTION
- o BIOLOGICAL HEALTH MONITORING
- o USE OF BREATHING AIR
- o SPECIAL PROTECTIVE CLOTHING
- o SUPERVISION OF CONTRACT EMPLOYEES
- o CONTRACTOR SAFETY/HEALTH ORIENTATION
- o HYGIENE FACILITIES
- o EXPOSURE MONITORING
- o EMERGENCY MEDICAL CARE
- o INJURY REPORTING
- o USE OF PERMIT SYSTEMS

2. In all contractor work on company property, contractor supervision is expected to maintain responsibility for the safety and health of his employees; Monsanto is responsible for fully advising the contractor of any safety, environmental, and health hazards associations with the work in order that the contractor may carry out his obligations. Monsanto will also advise on the appropriateness of special protective clothing and equipment specific to operating areas in which contract personnel will work.

3. Prior to beginning work in the field, Monsanto representatives and area supervision--if work is in or adjacent an existing unit--shall

apprise the contractor of industrial hazards (including chemical health hazards) and safety procedures specific to the assigned work area. Relevant permit procedures (i.e. hot work, tank entry, lock-out, etc.) should be futher discussed to avoid any later misunderstanding on applicability.

4. Contractor shall furnish and require the use and wearing of proper personal protective equipment and clothing by its employees. Special work clothing such as goggles, gloves and other body, face and head protection must be used as directed by the Contract Administrator or Monsanto Representative. If the contractor does not have specific equipment, the task shall be delayed until such equipment can be obtained by the contractor. Personal protective clothing and equipment shall not be supplied by Monsanto.

5. Use of respiratory protective devices require medical approval, fitting, training, and cleaning/maintenance. Accordingly, each contract employee who may have need to wear a respirator shall be properly fit and trained in its use prior to beginning work. Each contractor shall be responsible for furnishing the proper devices to his employees and assuring that they have been medically certified to wear the equipment.

In the event contract employees have not been fitted and respiratory protection is deemed necessary, only positive pressure, supplied air equipment can be used. In all cases, location

policy regarding facial hair in the sealing area of respirators must be adhered to by the contractor.

6. Contractor shall assure that medical facilities are available for his employees. All medical services (e.g. routine physicals, pre-placement exams, etc.) shall be provided by the contractor with the exception of:

EMERGENCY TREATMENT WHERE THE SEVERITY OF THE INJURY DICTATES IMMEDIATE ATTENTION ON-SITE. MONSANTO WILL PROVIDE FIRST AID TREATMENT ONLY TO THE EXTENT NECESSARY TO STABILIZE THE CONDITION OF THE CONTRACT EMPLOYEE FOR TRANSPORT TO THE CONTRACTOR'S MEDICAL SERVICE.

UNIQUE BIOLOGICAL MONITORING OF BODY FLUIDS AS REQUIRED BY MONSANTO WHEN HANDLING OR EXPOSED TO SELECT PROCESS CHEMICALS. MONSANTO WILL UNDER THESE SITUATIONS CONDUCT APPROPRIATE TESTS AND PROVIDE THE CONTRACTOR'S MEDICAL SERVICE THE DATA AND AN EVALUATION OF THE RESULTS AS THEY RELATE TO OCCUPATIONAL EXPOSURE SPECIFIC TO MONSANTO PROCESSES. CONTRACTOR SHALL BE MADE AWARE OF THESE PROVISIONS PRIOR TO BIDDING WITH SUCH REQUIREMENTS WRITTEN AS PART OF THE CONTRACT. WHERE "BASE-LINE" DATA ON CONTRACT EMPLOYEES IS REQUIRED PRIOR TO WORKING IN AN AREA, SUFFICIENT LEAD TIME FOR COLLECTION AND ANALYSIS OF SAMPLES WILL BE NEEDED IN SCHEDULING THE WORK.

7. All contractor tools and equipment on site shall conform to plant standards. Such standards and specifications shall be communicated to contractor prior to equipment usage. Monsanto shall have the right to refuse or restrict the use of tools, equipment, or chemicals on the site. Monsanto's equipment or tools will not be loaned to contractor's employees.

8. Each contractor shall provide suitable eating facilities which are: separate from the work area, kept clean, and include adequate washing facilities.

9. Employee change and shower facilities, if required, will be furnished by contractor. Monsanto shall have the right to inspect facilities to ensure satisfactory hygiene conditions.

10. Monsanto may conduct area monitoring of chemical/physical agents to identify potential hazards created by existing processes so that the contractor can be made aware of appropriate precautions to be taken while working in the area.

    In situations where personnel (industrial hygiene) monitoring is required by OSHA standards on substances to which contract employees will reasonably be exposed, the contractor shall be advised of his legal obligation prior to entering the plant and within the context of the contract. Monsanto will provide necessary monitoring services upon written request of the contractor. Monsanto sampling instruments shall not be loaned to or used by contract personnel.

11. Contractor must comply with proper plant procedures for securing permits involving hot work, tank entry, breaking into pipelines, and lock-out, etc. Permits will be coordinated through the Monsanto representative. Monsanto will isolate equipment and test atmospheres prior to any contractor confined space entry. Fire watches, if required in existing manufacturing areas, shall be furnished by and at the expense of Monsanto.

12. Hazards associated with CEA 3808 are primarily the potential for skin

contact with various organic materials. Such contact may result in acute local reactions or acute systemic reactions. Precautions should be taken to minimize or prevent skin contact with contaminated soil. The use of rubber boots and gloves may be necessary during portions of the job.

Routine use of respiratory protection is not anticipated. However, portions of the job will require periodic use of respiratory protection, the contractor must provide the equipment and insure that they are used in accordance with all provisions of 29 CFR 1910.134.

Prior to the start of work the contractor must be advised of hazards associated with the job in accordance with Illinois Department of Labor regulations, Title 56 Chapter I, Part 205, Toxic Substances Disclosure to Employees. This regulation requires that the contractor be advised of any toxic materials to which the contractor employes may be exposed and that material safety data sheets for such materials be provided to the contractor. Further the law requires that the contractor advise the contractor employees of this information. The manufacturing representative and the industrial hygienist shall be responsible for complying with the requirements of the Illinois Disclosure Act.

MONSANTO

From: Gordon A. Grundmann CS6G — Corporate Engineering (4-6112)

Date: October 15, 1984

Subj: Project Progress Meeting

Re: CEA 3808 - Main South Trunk Sewer

TO:

T.N. Carrico	1740
W.C. Koester	Alberici
K.W. Lichtenheld	CS6G
C.J. Lotz	Alberici
R.L. Nelson	1740
O.N. Shipley	1740

cc:

D.R. Bowers	CS6G
L.V. Bumbicka	1740
R.M. Calles	CS6G
M.A. Coco	Alberici
E.R. Hartman	CS6G
P.R. Hoemann	1740
L.C. Kreh	F2ED
F.A. Mayse	CS6G
R.J. Murphy	1740
R.L. Wiese	CS6G
T.W. Wright	CS6G

Following are minutes of the meeting held at the CED construction trailers on 10/11/84 at 10:00 a.m.

1. Construction Progress

Alberici signed a contract with the Local Laborers Union on 10/02/84. As a result, Alberici moved on site on 10/03/84 and began some exploratory excavation. Several items have been accomplished:

a. The 42" bell stub out on the sewer inlet box near Highway 3 has been uncovered. Elevations are being checked.

b. The benzene line has been uncovered and found to be in the way of the new sewer line. Preparations to relocate the benzene line are in progress. The plant has furnished a revised routing and a long radius elbow has been purchased and received.

c. Portions of the existing fire main have been uncovered to see if they will interfere with the sewer work. Temporary fire main work has already been completed to insure fire protection while interfering lines are removed from service during construction.

2. 42" VCP Pipe Delivery

Alberici and Monsanto personnel visited the pipe vendor's shop on 10/09/84 to inspect the 42" pipe for acceptability as well as clarify specification requirements. The vendor will proceed with hydrostatic testing of the pipe and should ship the first lot in 2-3 weeks. This schedule will not delay construction work.

3. 42" VCP Joint Material Testing

Full scale tests have been made on 42" pipe sections to allow evaluation of substitute materials for caulking and back joint materials. A hydrostatic test of the 42" pipe sections is planned for 10/15/84. After this test, the joints will be cut so that they can be viewed in cross sections. The results of this testing should allow a decision on these joint materials the week of 10/15/84. (Lichtenheld, Nelson, Alberici).

The two materials being evaluated are as follows:

a. A furan based material is being tested as a substitute caulking material for asbestos roving which is no longer available.

b. An epoxy back-joint material is being tested as a substitute for hot-poured sulfur since it is safer to work with as well as being stronger.

4. Manhole 1-CC Change

A Project Change Notice has been processed which replaces the 36" riser pipe concept with a standard acid brick-lined manhole on manhole 1-CC. Shipley to write CFO.

5. Trestles

Three trestles are required to allow continued rail access to ACL during a construction period which would last approximately 3-months. A preliminary design on these trestles and supporting piling indicates they are costly.

Chris Lotz of Alberici has proposed an alternate idea which would eliminate the need for trestles. The two existing spur tracks east of ACL could possibly be extended north to tie into the track running north and south along "H" Street. Nelson to review the feasibility of this concept from a plant standpoint. Alberici to obtain rough prices to do the work.

The trestle design has been put on hold until this idea has been explored.

6. Location of Lateral Boxes

Lateral boxes 1-HH and 1-JJ are located near existing railroad tracks. The hole that needs to be dug to build these boxes is too close to the railroad tracks for safety.

Relocation of these boxes or even possible elimination is to be reviewed to alleviate this problem. Nelson and Lichtenheld.

7. Schedule

   Alberici furnished a revised schedule for review. After discussion, they will revise the schedule by adding some refinements and spreading it out more on the computer run to make it more readible.

8. Nelson published the Safety and Health Plan document dated 10/05/84. Copies of this document are attached.

9. Lichtenheld has given Alberici information on the flows on the sewer lines.

The next progress meeting will be held at the construction trailers at 9:00 a.m. on Thursday, October 18, 1984.

Gordon

mb/1387Z

Attachment

Monsanto

FROM (NAME—LOCATION—PHONE): T. Carrico, Ext. 2095

DATE: October 15, 1984

SUBJECT: Status Report on CEA 3808

REFERENCE:

TO: P. Hoemann

cc. L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

Meeting was held on October 11 with Alberici representatives present. Topics discussed included trip to Dickey last week, joint hydro test planned for today and an alternative plan for the chlorine car tracks at ACL.

Safety and health plan was issued for the job.

Met with two Safety representative from Alberici.

Excavation work to relocate benzene transfer line complete. Line to be fabricated this week and change planned.

Layout work, cutting of asphalt proceeding east on 5th Street at work permits.

Tom Carrico
Operation Foreman

skg

WGK 4084844

Monsanto

FROM (NAME—LOCATION—PHONE) R. Nelson

DATE October 15, 1984

SUBJECT South Trunk Sewer
(Female Employees)

REFERENCE

TO : G. Grundmann - CS6G

cc. R. Murphy
E. Stewart
K. Storms
J. McQueeny
L. Bumbicka

Enclosed is a plant map indicating an area restricted to females. There will be no permanent assignments of females in this area. This restriction only applies to women capable of bearing children.

On Wednesday, October 3, 1984, I discovered that Alberici presently has a female employed for the south trunk sewer project who is seven weeks pregnant. Her duties required her to spend brief periods of time in the north westerly fringes of the restricted area. She has been instructed not to enter the restricted area and was given a plant map indicating this area. I also discussed this policy with W. C. Koester and C. J. Lotz of Alberici Construction.

This is a conservative measure but necessary to protect all parties concerned.

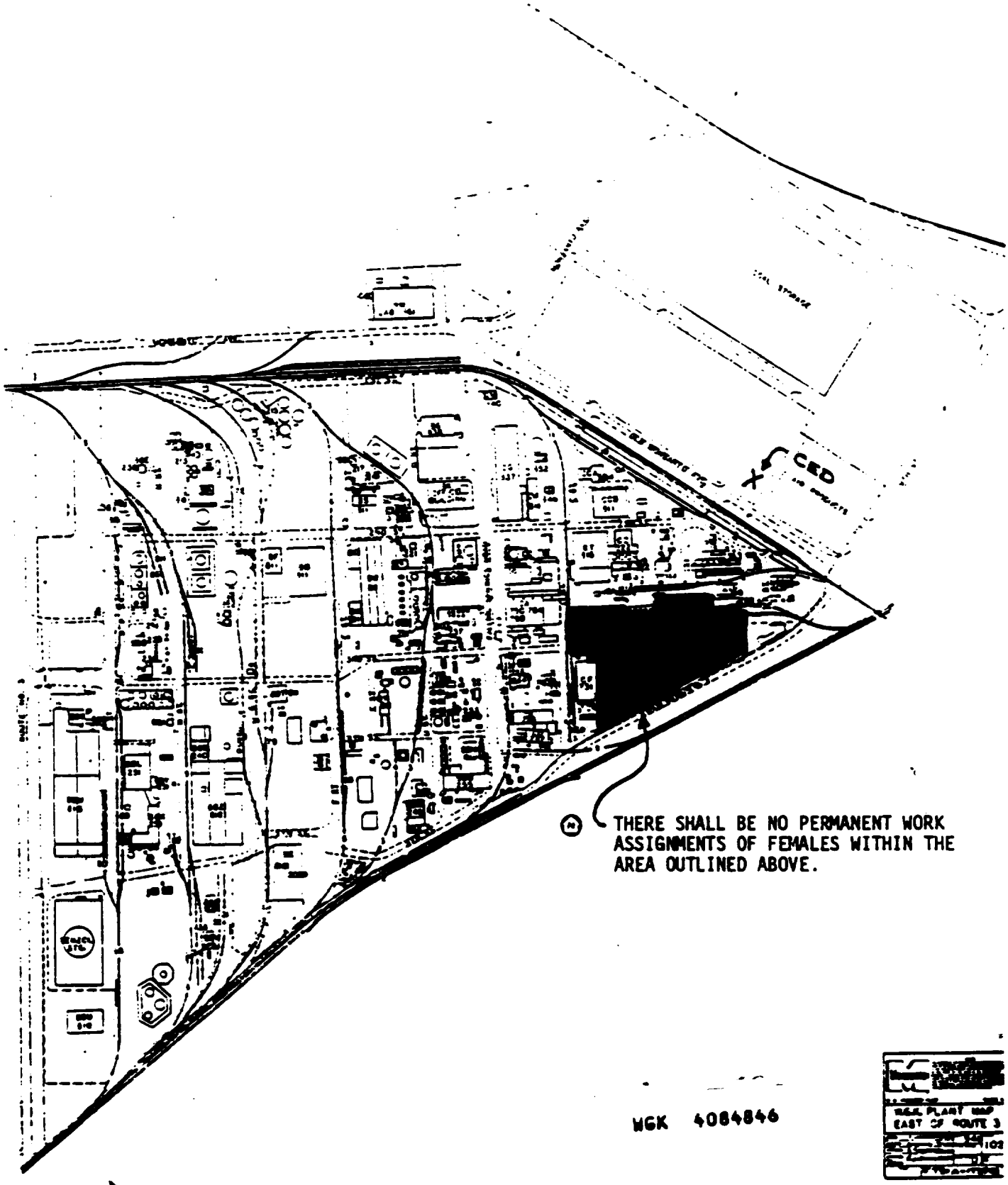
By this letter, I am requesting you to formally notify Alberici of this policy and document that notification.

R. L. Nelson

skg

WGK 4084845

N 1120



Monsanto

FROM (NAME—LOCATION—PHONE): T. Carrico, Ext. 2095

DATE: October 8, 1984

SUBJECT: Status Report on CEA 3808

REFERENCE:

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

TO: P. Hoemann

Alberici moved a security tool box on site October 3, 1984.

Excavation was started to locate tie in point on sewer box 1-B and the exact location of benzene transfer line.

Had to change out #1 dewatering pump Thursday.

Went into weekend running 1, 2, and 3 dewatering pumps.

Sample was taken of liquid in excavation on Thursday, and dirt from excavation was moved to a storage site south of contaminated drum storage building Friday.

Tom Carrico
Operation Foreman

skg

WGK 4084847

IN-1120

Monsanto

FROM (NAME–LOCATION–PHONE): R. L. Nelson, Sauget, Illinois

DATE: October 5, 1985

SUBJECT: CEA 3808 - Safety & Health Plan

REFERENCE:

TO: G. A. Grundmann - CS6G

cc: R. J. Murphy - CED Const.
K. Storms
W. L. Smull
J. J. McQueeny
L. B. Bumbicka

Attached is the Safety And Health Plan/procedure for the South Trunk Sewer Project CEA 3808. Note the paragraph pertaining to Title 29 Code of Federal Regulations, Section 1910, Chapter 134 (29 CFR 1910.134). The contractor will be responsible for fitting his people with respirators.

Any questions, please call.

R. L. Nelson

sms

Attachment: 1

WGK 4084848

N-1120

SAFETY AND HEALTH PLAN
CEA 3808

SCOPE

The following sets forth safety and occupational health considerations for personnel involved with installing the South Trunk sewer. These are not all inclusive and may be expanded in the future to better assist site management in consistently dealing with health and safety questions that arise. The guides cannot be expected to cover every situation but provide a framework within which sound field decisions can be made.

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requesting services should consult the site safety and health professionals to define those safety/health requirements called for to properly execute the work. (i.e. what is expected of the contractor and Monsanto.)

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- o BIOLOGICAL HEALTH MONITORING
- o USE OF BREATHING AIR
- o SPECIAL PROTECTIVE CLOTHING
- o SUPERVISION OF CONTRACT EMPLOYEES
- o CONTRACTOR SAFETY/HEALTH ORIENTATION
- o HYGIENE FACILITIES
- o EXPOSURE MONITORING
- o EMERGENCY MEDICAL CARE
- o INJURY REPORTING
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12. Hazards associated with CEA 3808 are primarily the potential for skin

contact with various organic materials. Such contact may result in acute local reactions or acute systemic reactions. Precautions should be taken to minimize or prevent skin contact with contaminated soil. The use of rubber boots and gloves may be necessary during portions of the job.

Routine use of respiratory protection is not anticipated. However, portions of the job will require periodic use of respiratory protection, the contractor must provide the equipment and insure that they are used in accordance with all provisions of 29 CFR 1910.134.

Prior to the start of work the contractor must be advised of hazards associated with the job in accordance with Illinois Department of Labor regulations, Title 56 Chapter I, Part 205, Toxic Substances Disclosure to Employees. This regulation requires that the contractor be advised of any toxic materials to which the contractor employes may be exposed and that material safety data sheets for such materials be provided to the contractor. Further the law requires that the contractor advise the contractor employees of this information. The manufacturing representative and the industrial hygienist shall be responsible for complying with the requirements of the Illinois Disclosure Act.

Monsanto

FROM (NAME—LOCATION—PHONE): R. L. Nelson, Sauget, Illinois

DATE: October 5, 1984

SUBJECT: Segregation Of Excavated Material

REFERENCE: CEA 3808

TO: R. J. Murphy
CED Construction

cc: G. A. Grundmann - CS6G
W. L. Smull
J. J. McQueeny
L. V. Bumbicka
O. N. Shipley
T. N. Carrico

We have divided the sewer route into 4 distinct areas for segregation of excavated material. Stockpile materials from each area in such a manner as to prevent cross contamination with other areas. Enclosed is a map showing the 4 areas.

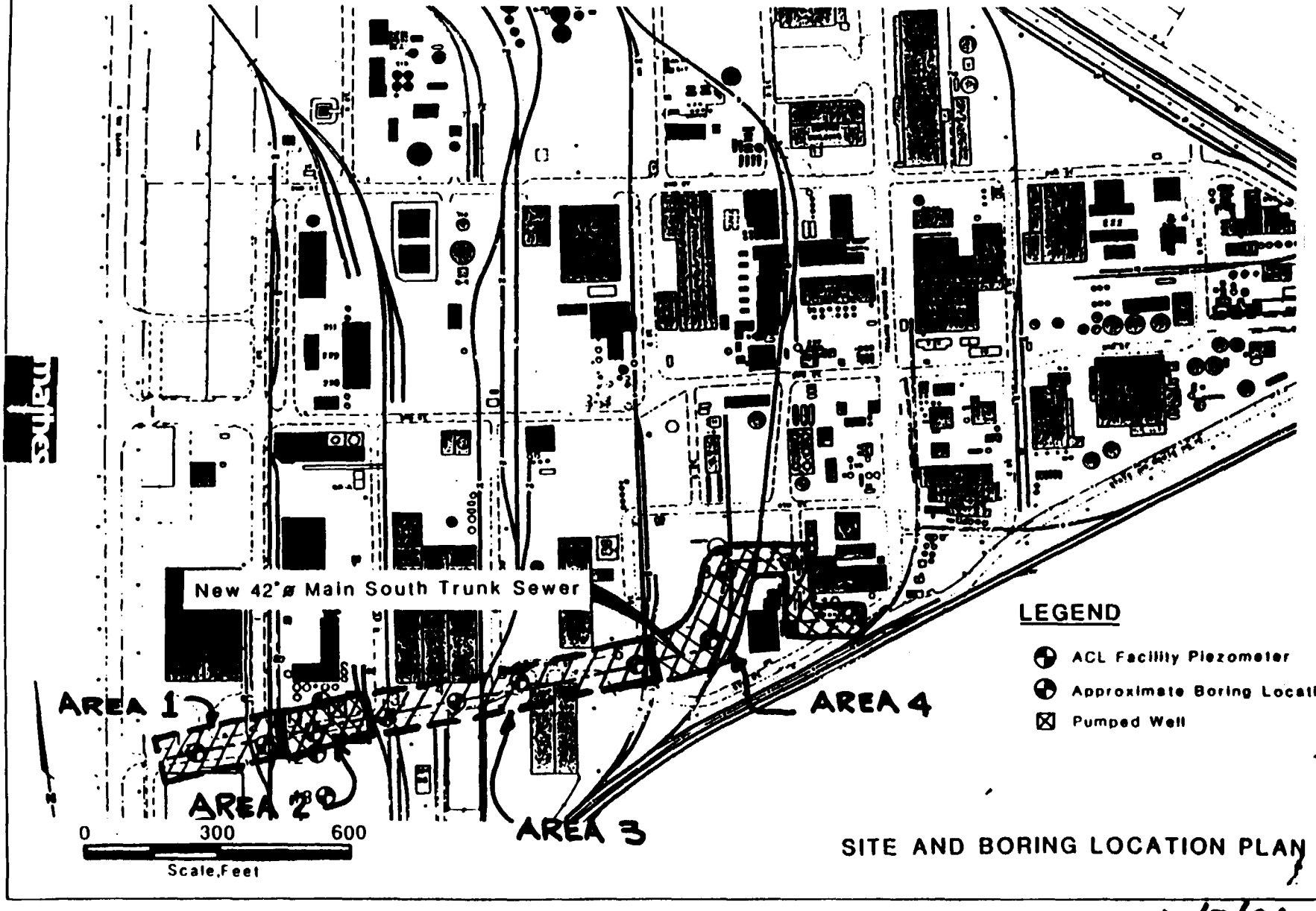
R. L. Nelson

sms

Attachment: 1

WGK 4084855

IN-1120



SITE AND BORING LOCATION PLAN

EXCAVATION PLAN - CEA 5808

10/5/84
RCN

John Mathes & Associates, Inc.

PLATE 2

EPA/CERCO COPPER/OIL/PCB ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE

HGK 4084656

Monsanto | MONSANTO COMPANY CORPORATE ENGINEERING DEPARTMENT | PROJECT CHANGE NOTICE

CEA/TITLE CEA 3808 / South Trunk Sewer

WRITTEN BY R.L. Nelson

DATE 10/1/84

For Project Manager use only

REC _____

CHANGE NUMBER. RFC _____

PRIORITY

A [X] Immediate B [ ] Before Mech. Completion C [ ] During Checkout D [ ] After Start-Up

DESCRIPTION OF CHANGE - Replace the 36" VCP Riser for MH 1-CC with a cast in place acid bricked concrete manhole. The reason for the change is as follows.

1) A full 42" tee is not available. Access through the 36" riser will be very difficult. Tie-ins to the 36" riser would be a problem should a need arise in the future

2) The manufacturer is concerned about testing this fitting since it would not be a "fired" fitting

3) The joint is considered a high risk area on such a large piece pipe

4) There is concern about breakage of the 42"x42"x36" fitting during shipment and/or construction. It will take 120 days to obtain a replacement should this fitting become damaged.

Although this was a cost saving idea incorporated into the construction contract, it does not appear to be a feasible alternate.

REASON FOR CHANGE Upon consideration of the above points expressed by the manufacturer, General Contractor and plant personnel the plant cannot support this alternate and request a change to revert to the orginal design.

ESTIMATED TOTAL COST Additional $28000.00 WGK 4084857

EFFECT ON SCHEDULE A problem with the 42x42x36 tee could result in a 120 day delay. The requested change will not effect the schedule

AUTHORIZATION R. Nelson

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: September 26, 1984

Subj: Meeting with Alberici

Re: CEA 3808 - Main South Trunk Sewer

TO: Those present:

T.N. Carrico	1740
M.A. Coco	Alberici
L.N. DeWald	1740
W.C. Koester	Alberici
K.W. Lichtenheld	CS6G
C.J. Lotz	Alberici
R.L. Nelson	1740
T.W. Wright	CS6G

cc:

L.V. Bumbicka	1740
R.M. Calles	CS6G
E.R. Hartman	CS6G
P.R. Hoemann	1740
L.C. Kreh	F2ED
F.A. Mayse	CS6G
R.J. Murphy	1740
O.N. Shipley	1740
R.L. Wiese	CS6G

WGK 4084858

Following are minutes of the meeting held at the CED construction trailers on 09/25/84 at 10:00 a.m.

1. As everyone knows, the unresolved laborer's contract has delayed start of this project. It has recently been decided that Alberici will take steps to reach an agreement with the Local 100 Union. If this occurs, work will begin on the sewer contract work in the near future.

2. The 42" VCP has been ordered. Originally, the vendor did not want to hydrostatically test the pipe and this has delayed inspection and shipment. Since then the vendor has agreed to test the pipe, but may come back with an additional charge. It should be noted that the requirement for hydro testing was in the original specifications. Alberici is to follow this situation to get resolution.

3. Materials to be used in the VCP pipe bell and spigot joints need to be resolved:

   a. Asbestos roving was originally specified as the caulking material for these joints. This material is no longer available.

      Unoiled jute was considered as a possible substitute, but this material is unacceptable. A furan material and a ceramic rope material are being tested for substitutes. A 42" piece of pipe has been located. This will allow a full scale test to take place.

   b. Alberici has requested that Monsanto consider replacing the hot poured sulfur back joint material with another material (DP-10) which can be worked at cooler temperatures. Further testing is planned to allow a decision to be made.

Alberici is to expedite testing of these options so that final decisions can be made.

4. Alberici is designing the trestles to allow usage of the two railroad tracks east of ACL during the construction period. Sketches to be submitted to Lichtenheld for approval the week of 10/01/84.

   Three trestles will be required in actuality since one of the lateral lines entering Manhole 1-EE crosses under one of these tracks.

   The upper portion of the trestle will be made so that it can be moved to other locations if required.

   The trestles must be installed in November during the ACL shutdown.

5. The 36" riser pipe, which was a cost saving idea to replace Manhole 1-CC, does not appear to be a feasible alternate. There are a number of concerns:

   a. Breakage of the 42" x 42" x 36" Tee at the saddle joint during fabrication, shipment and/or construction. It would take 120 days to obtain a replacement. The joint is considered to be a high risk area on such a large piece of pipe.

   b. The hydro test of this tee joint. WGK 4084859

   c. Access to the sewer through the 36" riser is difficult while wearing a Scott Air Pack or other similar device and trying to climb down a ladder.

   d. Tie-ins to the riser in the future are a problem.

   e. A full 42" Tee is not available.

6. The construction schedule furnished by Alberici was briefly reviewed. The schedule will be reworked based on the following concepts:

   a. The curing times required in various places must be adhered to with one possible exception; cast-in-place manways may not have to cure a full 14 days prior to testing with water.

   b. Assume that dewatering will not be a limitation even though the water treatment plant could shut us down at any time. Six to eight dewatering pumps can be used at one time by pumping at a reduced rate so as not to

exceed the allowable GPMs that can be sent to the treatment plant. Three pumps can be run at full rate at any time.

c. The schedule should not be restricted by the amount of open trench at this time. Instead the most efficient construction logic should be determined. Based on the open trench requirements that occur, we will work with plant personnel to try to make the plan workable.

Alberici to furnish revised schedule the week of 10/01/84.

7. Other items:

a. The water flows from the dewatering pumps can be routed to different drains if they cause problems with construction work.

b. Lichtenheld to furnish sketch giving more details on moving Manhole 2-EE 100-feet south.

c. Some lateral lines appear to be out of scale on the drawings. Lichtenheld to check.

d. Lichtenheld to forward to Alberici information on the flows in the sewer lines.

e. Alberici requested information on the various corrosive flows which could not be handled by an ordinary material diversion pump. In some cases a stainless steel pump may be considered, but experience has shown that carbon steel works almost as well in many instances. Nelson to furnish information.

f. It was clarified that the full cure time will be required on the various membranes and joint materials that are applied to existing manholes after a lateral line has been tied into the manhole.

g. Alberici's concrete forming plans are to be submitted to Monsanto for review.

Gordon Grundmann

WGK 4084860

mb/1212z

Monsanto

FROM
(NAME—LOCATION—PHONE) T. Carrico

DATE : October 1, 1984

SUBJECT : Status Report
on CEA 3808

REFERENCE :

TO : P. Hoemann

cc. L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

Meeting held with Alberici on September 25, 1984. Monsanto advised the contractor to proceed, feeling that the internal labor problems could carry on for months.

Based on the above, the contractor will probably start moving equipment on to the job site this week.

Decision made to proceed with the design and building of a trestle to bridge the sewer work at the chlorine dock tracks for ACL Department at 5th and "H" Street. Alberici will handle. The trestle has to be put in place during the November ACL turnaround.

The third and final fire main change was completed at west end of 5th Street. Four pictures were taken of change and as-built completed on September 27, 1984. Kevin McCrory and Harold Kellerman given a copy of as-built drawing.

Tom Carrico
Operations Foreman

skg

WGK 4084861

N-1120

Monsanto

NOTE:
Attachment to have been sent w/memo GAG to TNC, et al of 9/21/84
3808 Proj. Prog. Mtg.

FROM (NAME-LOCATION-PHONE): A.J. Quick (2271) W.G.K. Plant

DATE: September 18, 1984

cc: T. Carrico
W. Smull
K. Storms
N. Sullivan

SUBJECT: DISPOSAL PROCEDURE
EXCAVATION DIRT

REFERENCE

TO: R. Nelson

Attached is a dirt sampling/disposal procedure that you should follow relative to dirt excavated as a result of the upcoming south trunk sewer project. A similar procedure will be integrated into the Operations Manual in the near future.

The procedure relies on our best available knowledge of the history of the areas to be excavated. Areas with a history of similar potential soil contaminants are grouped together geographically. For the purposes of the south trunk sewer job, this means that the dirt excavated from a given group of similar areas should constitute a single dirt pile and will be disposed of as a single waste. Care should be taken to avoid co-mingling of different waste piles. Location of the waste piles within the plant is a decision that should be made by appropriate plant management.

Please call me with any questions.

A. J. Quick

AJQ/jc
Attachment

L.V. Bumbicka - 1740

WGK 4084862

EPA/CERRO COPPER/EIL/PCB ATTORNEY WORK PRODUCT / ATTORNEY CLIENT PRIVILEGE

DIRT DISPOSAL PROCEDURE SOUTH TRUNK SEWER PROJECT-WGK

I. PURPOSE

The purpose of this procedure is to provide a guideline for the handling, storage, and disposal of suspected contaminated dirt excavated during the south trunk sewer project at the W. G. Krummrich Plant. Methods of operations are outlined consistent with environmental regulations and good environmental practice.

II. POLICY

The project plant representative shall use all resources available to insure the classification, and subsequent proper disposal, of excavated dirt as hazardous, non-hazardous but non-sanitary, or sanitary waste consistent with environmental regulations and plant safety policies.

III. PROCEDURE

A. Pre-Excavation Activities

1. An analysis of the history of the area to be excavated will be made with special attention to potential soil contamination that may have resulted from previous plant operations.

2. Core samples of the area to be excavated will be extracted to the expected depth of excavation and analyzed by the plant laboratory or a contract laboratory approved by the plant laboratory. The analysis should quantify to the extent possible all organic contaminants present and any other contaminants that may reasonably be expected due to past practices in the immediate area.

3. Based on the historical analysis and the core sample results the plant representative will divide the area to be excavated into discreet groups of subareas with similar contamination. Dirt removed from similar areas is to be placed in discreet piles. This constitutes the dirt removal strategy.

4. The plant representative shall contact the plant industrial hygiene group to obtain guidance prior to excavation on proper protective equipment required and other safety considerations.

5. The plant representative will contact potentially affected operating departments supervision prior to excavation to make them aware of the planned activities in their respective areas. Department supervision and the plant representative will maintain close contact to insure the safe and environmentally acceptable completion of the excavation.

6. The Environmental Group will apply for the necessary permits required for the proper disposal of the contaminated dirt. Preferably this should be initiated prior to excavation so as to minimize dirt pile storage time, providing the information available is deemed reliable and sufficient for permitting purposes.

7. The plant representative will obtain appropriate approvals for siting areas in the plant for the temporary storage of excavated dirt.

8. The plant representative will insure that contract or plant personnel to be involved in the excavation are knowledgeable of all safety and environmental concerns as well as the strategy for dirt removal.

B. Excavation Activities

1. All plant safety procedures and the strategy developed for dirt removal shall be followed during excavation.

2. Key safety concerns include:

   1. Monitoring the excavation area for flammable vapors.

   2. Staying alert for unexpected soil contaminants that may adversely affect personnel health or safety. Plant representative to follow guidelines established by the industrial hygiene group relative to this situation. Plant representative to stop excavation and immediately notify both the Safety and Environmental groups should significant unexpected contamination be detected.

   3. The discreet dirt piles generated during excavation consistent with the dirt removal strategy should be physically separated sufficiently to prevent co-mingling, using good judgement. The dirt removal should be piled in the pre-designated areas.

   4. Care must be taken to avoid disruption of ongoing plant operations. Unexpected impacts to operations will be reported immediately to affected department supervision. Any unexpected environment impacts will be reported immediately to the Environmental Group.

C. Post Excavation Activities

WGK 4084864

1. Dirt removal equipment should be decontaminated as appropriate.

2. Upon suspicion of unexpected contamination the respective dirt pile will be resampled by the Environmental Group.

III. C. 2. (continued)

who will obtain disposal permit modifications as appropriate based on the analysis.

3. Only clean, uncontaminated dirt should be utilized as fill following excavation.

4. Dirt piles will be sent out for disposal to only disposal locations specified by the Environmental Group. Only appropriately licensed special waste haulers will be used to haul non-sanitary dirt per Illinois Waste Regulations.

5. Shipments of non-sanitary dirt must be accompanied by a waste manifest developed by the Shipping Department.

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: September 21, 1984

Subj: Project Progress Meeting

Re: CEA 3808, Main South Trunk Sewer

TO:

T.N. Carrico	1740*
C.M. Crain	CS6G
R.C. Ferrario	CS6G
K.W. Lichtenheld	CS6G*
R.L. Nelson	1740*
O.N. Shipley	1740*
T.W. Wright	CS6H

cc:

L.C. Beck	CS6G
L.V. Bumbicka	1740
R.M. Calles	CS6G
E.R. Hartman	CS6G
P.R. Hoemann	1740
L.C. Kreh	F2ED
F.A. Mayse	CS6G
R.J. Murphy	1740
R.L. Wiese	CS6G

* Present at meeting

Following are minutes of the Project Progress meeting held at the Krummrich plant on Friday, September 21, at 10:00 a.m.

1. Craft labor contracts are still unresolved. This continues to hold up the start of the sewer construction work by Alberici.

2. Installation of the temporary fire mains continues. One tie-in needs to be made next week and the work is complete.

3. A dirt sampling/disposal procedure was issued by plant personnel on 09/18/84 (copy attached). A draft of the Health and Safety procedure covering exposed workers, etc., was issued for review and comment the week of 09/17/84.

4. A detailed look at the 36" Tee and riser for Manhole 1-CC has pointed up some concerns:

   a. The contractor has expressed concern over possible breakage of the Tee at the saddle joint during fabrication, shipping and/or construction.

   b. Climbing into a 36" Tee on a ladder is very difficult, especially while wearing a fresh air supply device as a Scott air pack which is plant standard.

   c. Tie-ins to the riser in the future are a problem.

   d. A 42" full Tee is not available. Delivery of the 42" x 42" x 36" Tee is approximately 120 days.

   There is a strong preference at this time to go back to the full manway as originally designed.

WGK 4084866

5. Alberici is working on the trestle design to allow the two railroad tracks east of ACL to be operable during the construction period. Installation is targeted for November during the ACL shutdown.

   The track east of BBW(8C) and the track west of Department 245 need to be reviewed for access concerns as soon as a definite out of service construction time frame can be determined.

   Access needs to the BBZ warehouse are also dependent on the actual construction timing.

6. The yard drain on drawing C-6 near Manhole 2-EE will be routed north and tied into a vertical clean out pipe which drops into box 2-B-1.

7. A full scale test is planned on 42" pipe using a substitute material for the asbestos roving for use in the VCP pipe joints. Nelson and Lichtenheld. Timing is contingent on obtaining the 42" pipe.

8. A meeting is planned next Tuesday, September 25, with Alberici personnel at the construction trailer at 10:00 a.m.

9. A design meeting is planned for Tuesday, October 2, at 9:00 a.m. at the construction trailer to primarily review the options for running jumper diversion T3. Lichtenheld, Nelson, Shipley, Carrico.

10. The status of testing and delivery of the 42" VCP pipe will be reviewed with Alberici next Tuesday.

Gordon Grundmann

mb

Attachment

1183Z

Monsanto

FROM (NAME—LOCATION—PHONE): T. Carrico

DATE: September 24, 1984

SUBJECT: Status Report on CEA 3808

REFERENCE:

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

TO: P. Hoemann

Labor situation has not changed.

The second jumper line put in from the north/south main on the east side of I west to the BBW sprinkler house was completed as planned.

This is expected to be a permanent change. As-built drawing with elevations was completed September 19 - copy to Kevin McCrory.

Disposal procedure for excavation dirt was completed and typed.

Health and Safety procedure in the reviewing stage.

Meeting with Alberici at CED trailers on September 25, 1984, at 9:00 p.m. to discuss project and labor situation.

Tom Carrico
Operation Foreman

skg

WGK 4084868

N-1120

Monsanto

FROM (NAME-LOCATION-PHONE) T. Carrico

DATE September 14, 1984

SUBJECT Status Report on CEA 3808

REFERENCE :

cc. L. Bumbicka
L. Lichtenheld
R. Murphy
R. Nelson
O. Shipley

TO : P. Hoemann

Labor contracts remain unresolved to the point that work can start without interruption.

Temporary tie-in was completed at the foam building northeast corner of Big Mo dike and temporary building repairs made.

A second temporary jump line from the east side of I Street to the sprinkler house on the southeast corner of BBW is being readied for Monday through Wednesday, completion next week. It will run under Track 8C.

All contaminated soil from the deep wells has been shipped to Chemical Waste Management in Alabama.

Testing and handling guide for contaminated soil still being worked on.

Tom Carrico

skg

MGK 4084869

N 1120

cc J. McQueen
Larry – FYI

PROJECT VARIANCE DATE: 09/05/84

AR NO.: 3808
CEA NO: 3808
VARIANCE NO: 2

CORPORATE ENGINEERING DEPARTMENT

TITLE: Main South Trunk Sewer ___ PROJECT SCOPE/PREMISES

LOCATION: W. G. Krummrich Plant _X_ EXECUTION

To:					
	D.R. Bowers	CS6G	F.A. Mayse	CS6G
	J.O. Bright	CS6G	J.W. Molloy	1740
	E.R. Hartman	CS6H	R.L. Nelson	1740
	R.M. Kountz	F2ED	M.E. Nolan	F1EA
	V.T. Matteucci	B2SC	R.L. Wiese	CS6G

PROJECT SUMMARY:

This project will install a new 42" diameter trunk sewer to carry all of the plant sewer load now carried by the two Sauget Village sewers at the south end of the plant.

DESCRIPTION:

This variance communicates the results of the Budget Estimate and revises the mechanical completion date for this project.

JUSTIFICATION:

In summary, the results of the Budget Estimate reaffirm the $5,000k capital cost of the AR Estimate. The expense costs have increased and the schedule has been extended for valid reasons.

The lump-sum bids solicited from contractors for the sewer work were higher than anticipated and contained in several instances, unacceptable terms and conditions.

APPROVAL: D.R. Bowers
D.R. Bowers
Mgr. Engrg., MIC Engrg.

G.A. Grundmann
G.A. Grundmann
Project Manager

APPROVAL: Fred L Mayse
F.A. Mayse
Mgr. SPEO, MIC Engrg.

WGK 4084870

JUSTIFICATION (continued):

Subsequently, a team with representatives from the plant and engineering evaluated lower cost alternatives. Contractors were asked to evaluate and independently suggest lower cost facility and construction techniques. In final contract negotiations with the contractor selected, the contract basis was converted to a Guaranteed Maximum Price (GMP) contract in lieu of the lump-sum contract originally planned. One major advantage of the GMP contract is that it includes shared savings of costs with the contractor, thus providing an incentive for the contractor to perform beyond normal expectations, while providing an additional opportunity for Monsanto to reduce costs. Additionally, the GMP contract minimizes potential for upside costs and change orders to Monsanto.

Other contract terms and conditions were carefully reviewed, negotiated, and resolved to give Monsanto a more favorable contract package.

Extra engineering time was expended on this project in favorable ways. In addition to improving the overall sewer routing, a number of manholes were eliminated and several obstructions were eliminated, including an increased clearance away from the xylene tank farm.

Expense costs are forecasted to increase on this project. There are two major reasons for this increased forecast:

1. The potential cost of diverting the existing sewer flows during the construction of the new sewer was not adequately provided for in the AR Estimate to permit ongoing plant operations. It is recommended for budget purposes that an allowance of $340k be forecast.

2. Operation of the dewatering pumps was originally included in capital costs. Accounting has advised that the work on these pumps will be maintenance and relocation work, which is properly categorized as Expense. The cost of this work is estimated at $210k.

FINANCIAL SUMMARY $K

	AR	EFC	THIS VARIANCE	NEW EFC	OVER/UNDER AR
CAPITAL	5,000	5,000	0	5,000	0
EXPENSE	700	700	500*	1,200	(500)

The estimated accuracy of this variance is ±10%.

*The additional expense is largely a forecast for diverting sewer flows during construction to maintain continuity of plant operations. This allowance was estimated with the successful contractor who has sewer construction experience. The actual costs have a potential to be much less if some

FINANCIAL SUMMARY $K (continued):

tie-ends can be accomplished without diversion. Engineering will work closely with the plant to do select construction and tie-ends during scheduled downtimes of plant units to minimize or eliminate diversion facilities pumping.

EFFECT ON PROJECT SCHEDULE:

There are several factors contributing to a longer project schedule.

Additional engineering time was taken for this project which resulted in a substantially improved overall sewer routing. This effort was carefully coordinated with plant personnel and was justified by the improved results.

In addition, the actual construction schedule for installing the sewer, as presented and documented by the successful contractor, will take several months longer to actually construct than was originally planned.

The cost reduction efforts, rebidding by the contractor with alternates, and contract negotiations resulting in a more favorable contract, took several months to complete.

Finally, the starting date of the project in the field has been delayed for over a month to date due to unresolved general craft labor contracts in Metro East.

Consequently, assuming resolution of labor contracts in September 1984, the mechanical completion of the project is now scheduled for January 1986, based on contract commitments and contractor schedules. The AR target completion date was May 1985.

GAG/mb
0810Z

Monsanto

FROM (NAME—LOCATION—PHONE): T. Carrico

DATE: September 10, 1984

SUBJECT: Status Report on CEA 3808

REFERENCE:

TO: P. Hoemann

L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

Actual start of the project is being held up due to some labor problems that remain unresolved (Alberici).

Ground has been opened at three locations south of BBW - preparatory work for project (CED).

Temporary piping has been run from new valve south of (JL9) west side of Big Mo dike to the foam facility on the northeast corner - tie in will be made on September 10, 1984.

A health and safety procedure and guide line has been developed for the project and will be typed.

Testing and handling procedure for contaminated soil is in the drafting stage.

Contaminated soil from deep well drilling located south of sub 13 will be moved to a landfill Monday, September 10, 1984 - 12 trucks scheduled.

Tom Carrico
Operations Foreman

MGK 4084873

IN 1120

Monsanto

FROM (NAME - LOCATION - PHONE): R. L. Nelson, Sauget, Illinois

DATE: September 7, 1984

SUBJECT: Camera Usage - CEA-3808

REFERENCE:

TO: J. W. Molloy

cc: R. J. Murphy
J. J. McQueeny
L. V. Bumbicka
T. N. Carrico
O. N. Shipley

Throughout the installation of the south trunk sewer, we would like to document construction by photography. The subject matter will be underground obstructions and close working areas.

Tom Carrico and/or O. N. Shipley will be the photographers. Any photographs leaving the plant will be routed through your office for approval.

I am requesting your approval to waive the present camera pass procedure for this project.

Approved: J. W. Molloy
Plant Manager

R. L. Nelson

sms

WGK 4084874

IN-1120

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: September 7, 1984

Subj: Project Progress Meeting

Re: CEA 3808, Main South Trunk Sewer

TO:

T.N. Carrico	1740*
C.M. Crain	CS6G
R.C. Ferrario	CS6G
K.W. Lichtenheld	CS6G
R.L. Nelson	1740
O.N. Shipley	1740*
T.W. Wright	CS6H

cc:

L.C. Beck	CS6G
L.V. Bumbicka	1740
R.M. Calles	CS6G
E.R. Hartman	CS6G
P.R. Hoemann	1740
L.C. Kreh	F2ED
F.A. Mayse	CS6G
R.J. Murphy	1740
R.L. Wiese	CS6G

* Present at meeting

Following are minutes of the Project Progress meeting held at the Krummrich plant on Thursday, September 6, at 10:00 a.m.

1. Craft labor contracts are still unresolved. This continues to hold up the start of the sewer construction work by Alberici.

2. Installation of the temporary fire mains continues. One tie-in was made this week and two other tie-ins are planned for next week.

3. The Health and Safety procedure is in preparation by D. Nelson and K. Storms. This procedure covers the testing for contaminated soil as well as the safety procedures required for workers, etc., who are exposed.

4. D. Nelson advises that a storage area for contaminated soil has been selected. Final approval of this area is in progress.

5. Alberici furnished a preliminary construction schedule on 08/31/84 covering the first 450-foot of the sewer to manhole 1-EE. Review of this schedule is in progress.

6. The two railroad tracks east of ACL cannot be out of service for extended periods of time. As a result, temporary trestles will probably be built to allow continuation of rail traffic during the sewer construction work. (tracks 8E & 8F).

   Current plans indicate that ACL will be shut down for a couple of weeks in late November. The temporary trestles need to be installed at this time. Preparations for design work and material purchases need to be started now to meet this timing. Lichtenheld and Nelson.

   The railroad track east of BBW (track 8C) also needs to be reviewed to see if rail loading can be accomplished from the north during construction. D. Nelson.

Limited access requirements to the south end of the BBZ storeroom during construction need to be reviewed. Nelson

7. The tie-in point for the yard drain on drawing C6 near manhole 2-EE needs to be reviewed. Nelson and Lichtenheld.

Weekly meetings will continue to be held at the construction trailer at 10:00 a.m. on Thursday mornings.

Gordon Grundmann

mb

1021z

MONSANTO

From: Gordon A. Grundmann CS6G Corporate Engineering (4-6112)

Date: August 24, 1984

Subj: Project Progress Meeting

Re: CEA 3808 Main South Trunk Sewer

TO:

T.N. Carrico	1740
C.M. Crain	CS6G
R.C. Ferrario	CS6G
K.W. Lichtenheld	CS6G
R.L. Nelson	1740*
O.N. Shipley	1740*
T.W. Wright	CS6H

cc:

L.C. Beck	CS6G
L.V. Bumbicka	1740
R.M. Calles	CS6G
E.R. Hartmann	CS6G
P.R. Hoemann	1740
L.C. Kreh	F2ED
F.A. Mayse	CS6G
R.J. Murphy	1740
R.L. Wiese	CS6G

* Present at Meeting

Following are minutes of the Project Progress meeting held at the Krummrich plant on Thursday, August 23, at 10:00 a.m.

1. Craft labor contracts are still unresolved. This continues to hold up the start of the sewer construction work by Alberici.

2. Shipley began digging on Monday, August 20, to locate the existing underground fire main at several locations. Installation of the temporary fire pipes to key areas will begin next week. Most of the materials necessary to do this work are on site.

3. Nelson is preparing a health and safety procedure for contaminated soil. This procedure will cover the testing procedure for contaminated soil as well as the safety procedures required for workers, etc., who are exposed to the soil. The procedure is targeted for issue the week of 08/27. Ken Storms is to assist Nelson.

4. Nelson and Bumbicka are in the process of getting approval for a dirt storage area for contaminated soil.

5. Alberici is to furnish a construction schedule covering the work to be accomplished for the initial 300 to 400 feet of sewer. This schedule is expected the week of 08/27.

   The railroad tracks east of ACL are important and probably can only be out of service for a couple of weeks. One option being considered is to build temporary trestles to allow the continuation of rail traffic during the sewer construction work.

6. Shipley advices that 12" surplus pipe is available at the plant in the event the 10" underground fire water line needs to be replaced where it runs along Fifth Street near Highway #3.

7. Nelson advises that work may start as early as next week to remove the three bays from the north end of the BI building as well as to relocate a telephone pole. The work should only take a few weeks to complete.

8. Lichtenheld to pursue the availability of a 42" Tee, etc., for possible use on manhole 1-CC.

9. Vendor testing continues on a possible substitute material for the asbestos rope in the VCP pipe joints. Lichtenheld and Nelson to continue to follow.

10. The two crossovers between the existing and new sewers need to be reviewed for verification and/or revision so that all details can be finalized. Lichtenheld, Nelson and Shipley will review.

Weekly meetings will continue to be held at the construction trailer at 10:00 a.m. on Thursday mornings.

Gordon

Gordon A. Grundmann

mb/0884Z

Monsanto

FROM
(NAME—LOCATION—PHONE) T. Carrico/Extension 2095

DATE : August 21, 1984

SUBJECT : Status Report on
CEA 3808

REFERENCE :

cc: L. Bumbicka
L. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

TO : P. Hoemann

1. Meeting held on August 16 with project manager.

2. Project being held up by Alberici due to labor contract situation not being resolved in area.

3. CED to begin exploratory digging on August 20, 1984, south of BBW warehouse.

4. This will be undertaken by the construction engineer because of the need to install isolation valves on fire water system and to locate a tie in spot and line in the path of project.

5. Dewatering pumps in place at wells 1, 2, 3, and 4 but not being run at this time.

Tom Carrico
Operations Foreman

skg

WGK 4084880

IN-1120

MONSANTO

From: Gordon A. Grundmann - CS6G Corporate Engineering (4-6112)

Date: August 17, 1984

Subj: Project Progress Meeting

Re: CEA 3808 Main South Trunk Sewer

TO:
- T.N. Carrico - 1740*
- C.M. Crain - CS6G
- R.C. Ferrario - CS6G
- K.W. Lichtenheld - CS6G
- R.L. Nelson - 1740
- O.N. Shipley - 1740*
- T.W. Wright - CS6H

cc:
- L.C. Beck - CS6G
- [redacted]
- R.M. Calles - CS6G
- E.R. Hartmann - CS6G
- P.R. Hoemann - 1740
- L.C. Kreh - F2ED
- F.A. Mayse - CS6G
- R.J. Murphy - 1740
- R.L. Wiese - CS6G

* Present at meeting

Following are minutes of the Project Progress meeting held at the Krummrich plant on Thursday, August 16 at 10 a.m.:

1. Alberici has not yet finalized contract agreements with all crafts. This is holding up starting of the construction work.

2. Shipley plans to start some exploration work on Monday, August 20:

   a. Locate the existing underground benzene line to see if its actual location will interfere with the sewer line.

   b. Check the tie-in inlet pipe to the main sewer box near Highway 3 to see if the inlet pipe is plugged on the inside or outside, and to see if any further preparatory work needs to be accomplished.

   c. Locate the existing 10" underground fire main where it will interfere with the new sewer line. This portion of the line will have to be taken out of service for some period of time. Shipley is planning to run special temporary feeders to key areas so that they will have fire water coverage during the time this 10" line is out of service. This plan has been reviewed with the fire chief, Harold Kellerman.

3. This project will have for its use as a lay down area the land north of 5th Street, between "F" and "G" streets and south of Substation 13.

4. Nelson needs to set up a detailed procedure for testing contaminated soil.

WGK 4084892

5. Alberici personnel will be located in some of the Monsanto buildings near ACL and south of the cooling tower. It is expected that some key people will be on site next week.

6. Shipley to check to see if any of the surplus 10" or 12" pipe at the site could be used for replacing the existing 10" underground main, if replacement is required.

7. The construction schedule from Alberici is due the week of August 20, 1984.

8. An acid brick installation seminar is planned in the future when the brick supplier is chosen by Alberici. Proposed attendees are Ken Lichtenheld, Tom Carrico, Owen Shipley and Dick Nelson.

9. Shipley plans to have a weekly meeting with site and Alberici personnel for the purposes of planning, reviewing progress, etc. Alberici's project engineer is expected to be on the site most of the time.

10. Tom Carrico will be on vacation from August 20 to September 4.

The next progress meeting will be held at the construction trailer at 10 a.m. on Thursday, August 23.

Gordon Grundmann

Gordon Grundmann

/is

WGK 4084893

Monsanto

FROM (NAME—LOCATION—PHONE) Robert J. Murphy - 1740

DATE August 20, 1984

SUBJECT Alberici Office Trailer

cc: Lee Kreh - F2ED
O.N. Shipley - 1740
R.L. Nelson - 1740

REFERENCE

TO : Larry Bumbicka - 1740

We would like the plant's permission to locate an office trailer in the area south of the ACL cooling tower. This trailer will be used by the Alberici field staff consisting of their project manager (part-time on site), project engineer, job superintendent, selected craft foremen, and secretary.

Since we have selected a contract strategy of T&M with a guaranteed maximum price, the documentation required will be quite extensive. All such documentation will be done in the field. The contractor will have in his trailer office equipment such as a copying maching, typewriters, calculators, etc.

The present schedule indicates that the trailer will be in the field about 24 months. Please inform me of the plant's decision at your earliest convenience.

If you have any questions please call.

Bob Murphy

acg

WGK 4084894

IN - 10 - REV 8 77

MONSANTO

From: Gordon A. Grundmann — Corporate Engineering (4-6112)

Date: August 15, 1984

Subj: Project Progress Meeting

Re: CEA 3808 Main South Trunk Sewer

TO: [redacted]
T. N. Carrico - 1740
K. W. Lichtenheld - CS6G
F. A. Mayse - CS6G
R. J. Murphy - 1740
R. L. Nelson - 1740
O. N. Shipley - 1740

cc: L. C. Beck - CS6G
R. M. Calles - CS6G
C. M. Crain - CS6G
R. C. Ferrario - CS6G
E. R. Hartmann - CS6G
L. C. Kreh - CS6G
R. L. Wiese - CS6G

Following is a brief summary of the items discussed in the project progress meeting held at the W. G. Krummrich plant on Friday, August 3 at 2:00 p.m.:

A. The general status of the project was discussed:

1. The contract for the major sewer work was finalized with Alberici. Work will begin as soon as pending craft contract agreements are signed.

2. The electrical power supply to 8 pumps has been completed. The remaining work will be accomplished on a fill in basis approach.

3. The budget estimate will be issued in the next few weeks.

4. The construction schedule will be updated and reissued as soon as an actual start date is determined. Coordination with all of the manufacturing departments will be a major effort throughout the project to minimize disruption of their operation.

B. Other general subjects discussed were as follows:

1. A list of the items on the project which are to be expensed is attached. Dick Nelson is to locate a dirt storage area for any contaminated soil.

2. This project has been identified as a pollution project. As a result, equipment and material purchases are tax exempt.

WGK 4084895

3. Addendum #1 to the contract specifications dated 7/16/84 was handed out. Dick Nelson had comments on two of the items:

   a. Item 6. Manhole 1-CC will be made with a 36" diameter VCP riser pipe. This is felt to be tight. A 42" diameter would be better.
   b. Item 9. Dick Nelson reiterated that inspection will be required on the installation of the corrosion resistant brickwork.

4. Alberici has identified key personnel.
   Project Engineer - Chris Lotz
   Project Manager - Bill Koester

5. Coordination with the plant will be handled through Dick Nelson and Tom Carrico. Tom will essentially be available full time, and Dick will be involved on a part time basis and on call at all times when questions, etc. arise.

6. Shipley, Lichtenheld and Nelson are to review and start planning in detail on how to accomplish the T1, T2 and T3 jumpers.
   The tie-in to the existing village box also needs to be reviewed.

7. Alberici has not yet selected an acid brick supplier.

8. A substitute for the asbestos rope in the VCP pipe joints may be required due to the difficulty in obtaining this material. Lichtenheld and Nelson are reviewing.

9. The plant will remove 3 bays from the BI building (60') and also move a telephone pole so that the sewer line can pass through this area. Timing to be determined later.

10. A corporate inspection will take place at the Krummrich plant on 9/11/84 and 9/12/84.

Weekly project meetings are scheduled at the construction trailers at 10 a.m. on Thursday mornings.

Gordon

Gordon Grundmann

/ias

WGK 4084896

EXPENSE ITEMS 8/3/84

CEA 3808 MAIN SOUTH TRUNK SEWER

1. Maintain and relocate dewatering pumps (operation of pumps is not an expense, but plant will charge no time here.)
2. Removal from site of contaminated soil, disposal and testing.
3. Care of flow (sewer diversions) (T1, T2, and T3 jumpers)
4. Dismantle building.
5. Plug existing sewers.
6. Removal and replacement of railroad tracks. Construction of ground level trestles to maintain rail traffic over open trenches.
7. Removal and replacement of curbs, pavement, etc.
8. Removal and replacement of fire main.
9. Removal and replacement of benzene line.
10. All other items normally considered to be expense per standard code of accounts.

WGK 4084897

Monsanto

FROM (NAME—LOCATION—PHONE) T. Carrico, Extension 2095

DATE August 8, 1984

SUBJECT Status Report on CEA 3808

REFERENCE :

TO : P. Hoemann

cc: L. Bumbicka
K. Lichtenheld - CS6G
R. Murphy
R. Nelson
O. Shipley

The discharge piping was modified on No. 3 pump and it now functions okay.

A meeting was held with the project manager to discuss concerns ahead with the contract finally signed.

Tom Carrico
Operations Foreman

skg

WGK 4084898

Monsanto

FROM (NAME–LOCATION–PHONE): R. L. Nelson, Sauget, Illinois

DATE: August 2, 1984

CC:

SUBJECT: Review Of South Trunk Sewer Design

REFERENCE: P. H. Wise Letter Of July 10, 1984

TO: W. L. Smull

In reply to P. Wise's letter I offer the following comments.

Item 1

A double brick course below the normal operating level in the manholes is not required by design. The depth of our manholes does not warrant a double brick course. Our design calls for brick arches around the pipe to distribute the load. A "bull's-eye" or collar around the entire pipe is an unnecessary expense and adds nothing to the structural integrity of the brickwork on our design.

Item 2

The pipe currently extends into the manhole 9" at the center line and 2" at the junction of pipe and wall. I do not see any benefit to extending the pipe further into the manhole.

Item 3

The best design practice dictates dishing the bottom of large acid brick manholes to keep the brick in compression. Likewise, round manholes were utilized versus square or rectangular manholes for the same reason.

Item 4

The use of "doubles" (8"x3-3/4"x4½") was eliminated from this project because they do not meet ASTM Type L specification for acid brick. The current manufacturers of "doubles" classify them as modified Type L. These brick are not as chemically resistant as Type L singles.

Item 5

I am not certain what is meant by "parged" membrane. I take exception to the statement our membrane design will not work. The Furalac membrane specified is a common membrane system utilized in acid brick construction. The system is a built-up membrane with a finished thickness of 3/16".

WGK 4084899

Item 6

Furan is an acid catalyzed material and will attack concrete. An asphaltic membrane serves a dual purpose: it protects the concrete from attack during the curing of the furan and provides a secondary barrier to acids.

Item 7

We have evaluated many materials, methods and latest design techniques for "acid proof" construction. Rezclad, a product of Atlas Mineral And Chemicals, Inc. was unsuccessfully demonstrated, in a controlled environment, by Atlas personnel. This product is not acceptable by our standards.

Item 8

Our design calls for all interior concrete, be it manhole walls or encasement, to be protected by our two membrane system; further the furan membrane is extended on to the pipe projecting into the manhole.

Item 9

Our specifications call for all pipe mating surfaces to receive a light sand blast.

I find it very interesting that items 4, 5, 6, and 7 are the very items we have discussed at length with Atlas personnel. During the discussion and demonstrations we informed Atlas of the unacceptability of these items.

I would be delighted to discuss any questions or design details with Paul Weis if he desires.

R. L. Nelson

R. L. Nelson

sms

WGK 4084900

CEA 3808 L.V.B. 8/3/84

R. Murphy   T. Canico
O. Shipley   F. Mayse
G.
K. Lichtenfeld
T. Bumbria
R. Nelson
ALBERICI

$5M variance no change in capital

EXP - $700K orig
$1.2M latest expense (because)
1) Diversion of flow.
2) Maint and Relocation of dewatering pumps

WGK 4084901

Contingency reduced 8% → 4½%.

Dirt storage area — clean (SOUTH OF BIG MO?)
— contaminated.

This is a pollution project, no tax will have to be paid. Credit will be received for taxes paid on purchase of new equipment already bought.

Weekly meeting 10:00AM Thursday

Need Alberici's construction schedule.
→ Plant to only move the pumps ←
all pipe electrical etc to be done by outside
→ Christofz, proj eng ALBERICI

→ Bruce Kreis - superintendent
- project manager ←

Guaranteed max.

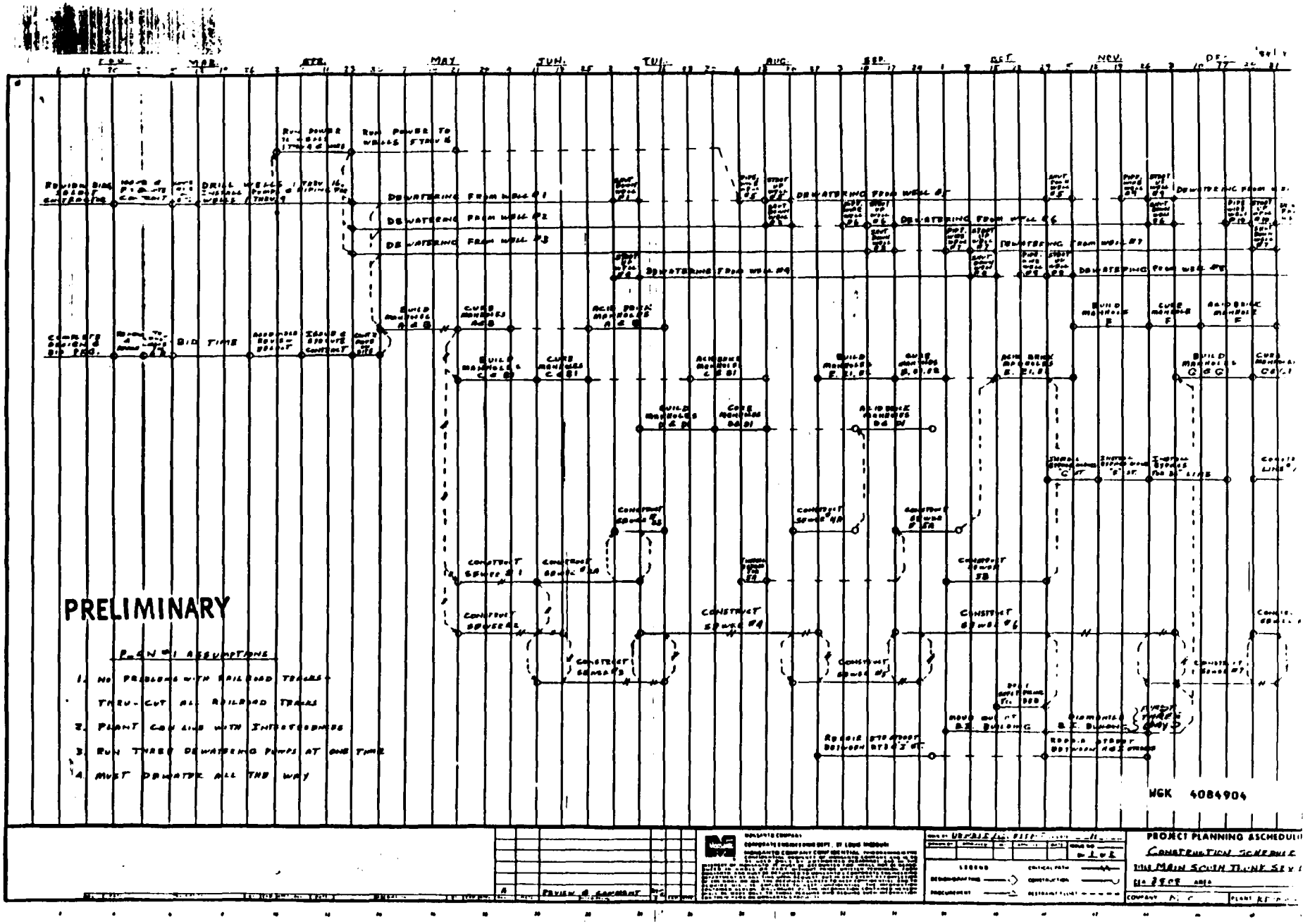
Detailed contract is scheduled September 1.
Asbestos rope problem.

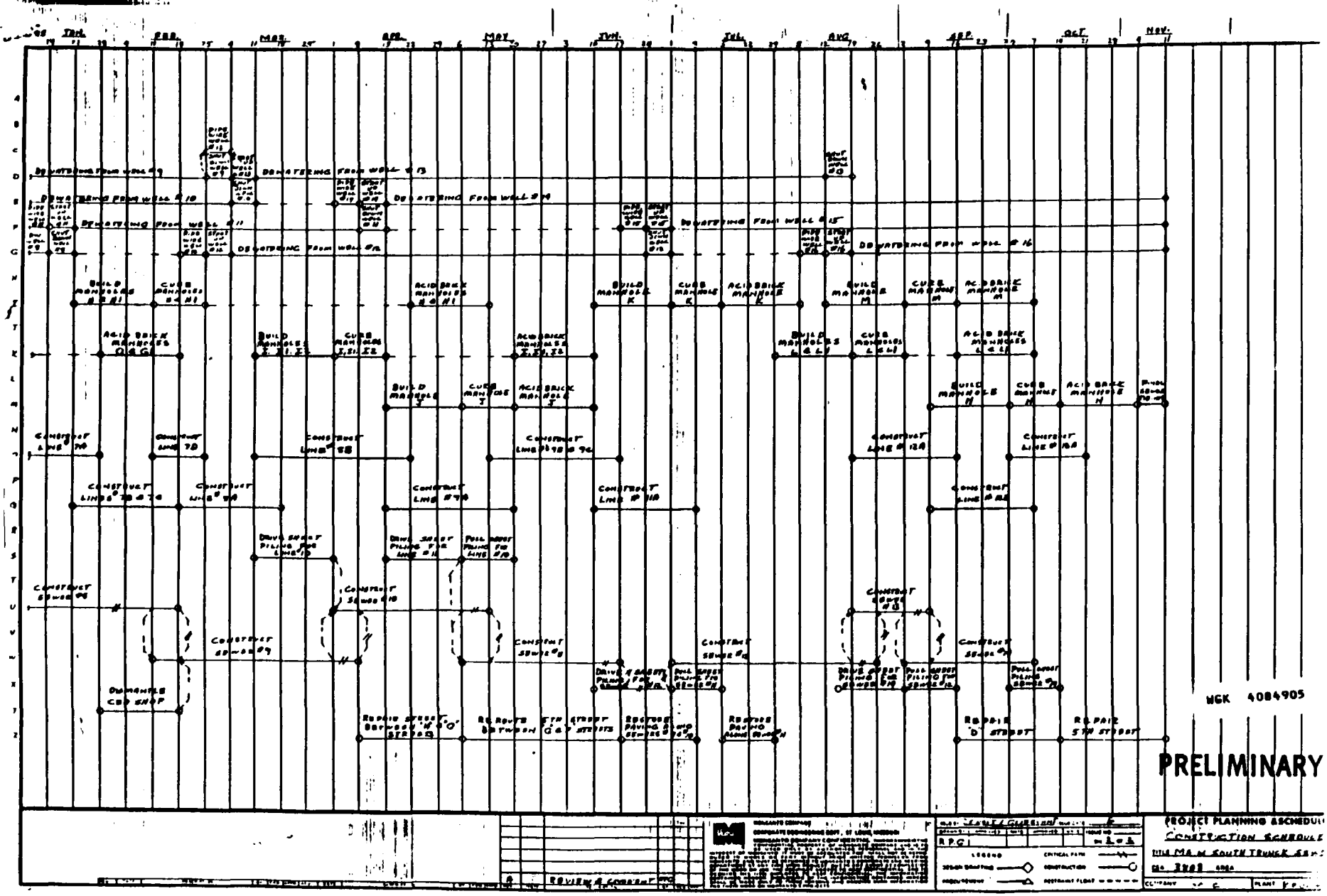
EXPENSE ITEMS 8/3/84

CLEA 3808 MAIN SOUTH TRUNK SEWER

1. MAINTAIN & RELOCATE DEWATERING PUMPS (OPERATION OF PUMPS IS NOT AN EXPENSE, BUT PLANT WILL CHARGE NO TIME HERE.)
2. REMOVAL OF CONTAMINATED SOIL AND DISPOSAL.
3. CARE OF FLOW (SEWER DIVERSIONS) (T1, TLETS JUMPERS)
4. DISMANTLE BLDG
5. PLUG EXISTING SEWERS
6. REMOVAL & REPLACEMENT OF RAILROAD TRACKS/TRESTLES
7. " " " " CURBS, PAVEMENT, ETC.
8. " " " " FIRE MAIN
9. " " " " BENZENE LINE
10. ALL OTHER ITEMS NORMALLY CONSIDERED TO BE EXPENSE

NOTE: UNDERGROUND OBSTRUCTIONS ARE NOT TO BE EXPENSED.





Monsanto

FROM
(NAME—LOCATION—PHONE) T. Carrico

DATE : July 30, 1984

SUBJECT : Status Report on
CEA 3808

REFERENCE :

TO : P. Hoemann

cc: L. Bumbicka
K. Lichtenheld
R. Murphy
R. Nelson
O. Shipley

The four dewatering pumps were set by the plant by Tuesday, at 5th Street, near I Street - first four wells.

They have been checked for rotation and pumping capability - all OK.

No. 3 pump which discharges south of 5th Street at I Street seems to pump more water than the sewer box can handle. This is being looked at by CED.

Tom Carrico

Tom Carrico
Operation Foreman
Extension 2095

skg

WGK 4084906

Monsanto

FROM (NAME—LOCATION—PHONE) R. L. Nelson - WGK

DATE : June 7, 1984

cc: D. C. Armstrong
E. J. Forneris

SUBJECT :

REFERENCE :

TO : J. J. McQueeny

The South Trunk Sewer Project costs were projected to be: $6,200K capital; $700K expense. Breakdown of capital costs are:

$4,800K	Contractor bid including directs
500K	Indirects
500K	Engineering
400K	Contingency
$6,200K	

Several steps were taken to reduce capital costs.

1. We have discussed design changes which will reduce costs without sacrificing the integrity of the sewer.

2. We have obtained approval from CED and plant accounting personnel to reclassify some capital expenditures as expense expenditures.

3. CED personnel are presently pursuing possible cost savings with the general contractor.

As a result of the above actions, the approximate project costs are presently projected to be: $5,300K capital; $1,300K expense vs. an approval of $5,000K capital; $700K expense.

CED plans to finalize the costs within the next two weeks and prepare a variance for approval. The construction contract will not be awarded until the variance is approved.

Approximately $750K has been spent on the project to date.

R. L. Nelson

/bb

WGK 4084907

IN-1120

Monsanto

FROM (NAME—LOCATION—PHONE): H. Kellerman - W.G.K.

DATE: March 12, 1984

SUBJECT: MONITORING SEWER PROJECT PUMPS ON SHIFTS - FIRE DEPARTMENT SPECIALISTS

REFERENCE:

cc: J. Pace
E. Stewart
R. Nelson
R. Shaneberger
G. Forneris

TO: R. L. Faulkner

Please inform the Union Committee that the Fire Department Specialists will pick up the duty of monitoring the dewatering pumps on the South Trunk Sewer Project starting approximately April 15, 1984. Monitoring of these wells will require checks 2 to 4 times each shift, other than days Monday through Friday, to ensure the pumps are running.

There will be a total of 16 wells on this project, with a maximum of 3 starter racks controlling the operation of 6 pumps at any given time. The construction is estimated to last 18 to 20 months.

Harold Kellerman

Harold Kellerman,
Fire Chief

HK:dg

NOTE: An Article 10 Meeting has been scheduled to discuss the above subject on Thursday, March 15, 1984, at 10:00 a.m. Please mark your calendars accordingly, and please be prompt. The Union Committee informed via copy of this memo.

WGK 4084908

IN-1120

3/14/84

cc: R. L. Nelson
J. J. McQueeny

WELL MONITORING RESPONSIBILITY

Background: Plans to install a total of 16 wells along a route of the South Trunk Sewer line. Installation of these wells will start on March 15, 1984.

4 site starter panels/2 pumps per panel.

4 pumps will normally be operational but conditions at times may require 8 pumps.

Monitoring Responsibility: Starting approximately April 15, 1984.

1. Monitor red operational lights.
2. Reset and try to start if light is off.
3. Report to N/S any exceptions who will then be instructed to contact Bob Murphy or his designate, or Dick Nelson.
4. 2 - 4 checks/8 hours shift

Note: We may find that as we get into the job that we will need more than 16 pumps. An engineering study at this point indicated a need for 16 pumps but this may change due to unique ground situations.

Gene Forneris

WGK 4084909

Monsanto

MONSANTO INDUSTRIAL CHEMICALS CO.
Sauget, Illinois 62201
Phone: (618) 271-5835

March 16, 1984

Mayor Paul Sauget
Village Hall
Sauget, Illinois 62201

Dear Mayor Sauget:

The agreement underlying the "Resolution Approving Proposed Agreement With Monsanto Company For Forty-Two (42") Sewer" dated June 14, 1983 contains the provision; "that the Village retains the right to approve plans and specifications for the sewer, which approval shall not be unreasonably withheld".

To fulfill the requirements, please find enclosed "CEA 3808, Main South Trunk Sewer Construction Package, February 6, 1984" which contains the plans and specifications for approval by the Village. We would appreciate receiving your letter of approval by April 1, 1984.

Sincerely,

Warren L. Smull
General Superintendent
Environmental Affairs

/cm

cc: H. G. Baker, Jr.
P. H. Weis

bcc: J. Molloy
~~J. McQueeny~~

GENE F.

WGK 4084910

MONSANTO CORPORATE ENGINEERING DEPARTMENT PROJECT VARIANCE

CEA	TITLE	AR NO.	DATE	VAR NO
3808	Main South Trunk Sewer	CEA 3808	09/13/83	1

PRODUCT	COMPANY	PLANT
N/A	MIC	W.G. Krummrich

COST ELEMENT, $k	CAPITAL	EXPENSE
EXPENDED	25	0
COMMITTED	0	0
EST. TO COMPLETE	4,975	700
PENDING VARIANCES	0	0
THIS VARIANCE	0	0
UNDEVELOPED DESIGN	0	0
NEW EST'D FINAL COST	5,000	700
AR ESTIMATE	5,000	700
(OVER)/UNDER RUN	0	0
CONT. BEFORE THIS VAR.	414	98
CONT. AFTER THIS VAR.	414	98

VARIANCE CLASSIFICATION

[ ] PROJECT SCOPE

[ ] PROCESS PREMISES

[X] SITE PREMISES

[ ] DESIGN & CONSTRUCTION FACTORS

[ ] ESTIMATING FACTORS

TOTAL VARIANCES SUMMARY INCLUDING THIS ONE

NUMBER OF VARIANCES		COST TO DATE, $k CAPITAL	EXPENSE
1	SUM OF PROJECT SCOPE, PROCESS PREMISES, AND SITE PREMISES VARIANCES	0	0
0	SUM OF DESIGN & CONSTRUCTION FACTORS AND ESTIMATING FACTORS VARIANCES	0	0

DESCRIPTION, JUSTIFICATION, EFFECT ON PROJECT SCHEDULE, COST.

This project will install a new 42" diameter acid resistant sewer to pick up the discharges at the south end of the plant.

Description: This variance notes that the sewer routing previously agreed to in the strategy meeting has been changed for certain portions of the line.

Justification: Since approval of the Project Definition Report, an agreement was made to deed this sewer to the Village of Sauget five years after completion, at which time they will also receive a 20' easement on Monsanto's property.

APPROVAL AS INDICATED			DISTRIBUTION TO THOSE APPROVING AND:
TITLE & NAME	NOTED, APPVD	DATE	
D.R.Bowers/R.L.Wiese Mgrs. Engrg.- CS6G	[signature]	9/22/83	G.A. Grundmann - CS6G
J.O. Bright - CS6G Op. Co. Director	[signature]	9/21/83	S.R. Hinds - B2NL
V.T. Matteucci -B2SC Dir., Mfg. MIC	[signature]	9/21/83	E.W. Jones/M.J. Quirk - F1EA
R.L. Nelson - 1740 Mfg. Rep.	[signature]	9/23/83	S. Lands - F2ED/R.G. Murphy - 1740
			F.B. Matthews - 1740
			F.A. Mayse - CS6G
			J.W. Molloy - 1740
			R.L. Nelson - 1740

Forners

WGK 4084912

This easement will restrict the use of some valuable land on which future projects could be erected. In order to minimize infringement on this land, the plant requested that the new sewer be moved as close to the existing sewer as possible. Discussions with contractors and soil consultants, as well as internal discussions, have resulted in an agreement to move the new sewer 25' away from the existing sewer (was 40-50'). This is as close as the project team feels we should get consistent with maintaining a reasonable risk of not disturbing the existing sewer.

Effect on Project Schedule: None.

Effect on Project Cost: This variance does not indicate any increased cost resulting from this site premise change. However, it must be recognized that the risk of incurring additional costs due to disturbing the existing sewer has increased because of the two sewers being moved closer together.

G. A. Grundmann

G. A. Grundmann
Project Manager

mb/6205Y

Monsanto

FROM (NAME—LOCATION—PHONE): B. J. Sevey CS7L Corporate Engineering (4-6913)

DATE: April 7, 1983

CC:

SUBJECT: CEA 3808, MAIN SOUTH TRUNK SEWER, W. G. K.

REFERENCE:

TO: Distribution

Attached is the approved Appropriation Project Definition Report. Significant changes from the August 4, 1982 draft of the PDR are marked in the right hand column with a vertical line. They are primarily:

1. Changes in the distribution.
2. Soils dewatering to be accomplished by plant forces rather than the contractor.
3. Deletion of the relocation of 5th Street and associated railroad crossings.
4. The ACL Waste Pre-treatment Project, CEA 3741, has been approved and is under construction.

B. J. Sevey

BJS/kh

Attachment

WGK 4084914

IN - 10 REV 8 77

Monsanto

FROM (NAME—LOCATION—PHONE): * Gordon A. Grundmann CS6G — Corporate Engineering (4-6112)

DATE: July 29, 1983

SUBJECT: Sewer Routing Concerns
CEA 3808 - Main South Trunk Sewer

REFERENCE:

cc: * D.R. Bowers - CS6G
* E.R. Hartman - CS6G
* F.A. Mayse - CS6G
* R.J. Murphy - 1740

TO: *W.C. Engman - 1740
*E.J. Forneris - 1740
K.W. Lichtenheld - CS6G
*F.B. Matthews - 1740
*R.L. Nelson - 1740
*W.L. Smull - 1740

* Present at meeting

This memo summarizes the comments made during the meeting held at the Krummrich plant to discuss plant concerns over the proposed sewer routing. To understand the concerns, some history is helpful.

When the approved Project Definition Report was issued for this project, Monsanto was to maintain ownership of the sewer. Since this time, however, financial considerations have resulted in our agreement to deed these sewers to the Village of Sauget five (5) years after completion. When the Village owns the sewers, they will need easement rights. Easement rights for a sewer of this size will be substantial in terms of the footage of property required.

As a result, the easement would restrict the use of some valuable land on which future expansion projects could be erected. In order to minimize infringement on this land, the plant would like to move the new sewer closer to the existing sewers in select areas rather than what is now presently planned.

There are also serious soil stability concerns that dictate how closely the new sewer can be located to the existing sewer. Probably the most important information that needs to be obtained to resolve this matter is the results from soil borings. Steps will be taken to obtain soil borings as soon as possible.

After results are received, we will finalize the sewer routing.

G. A. Grundmann

G. A. Grundmann

P.S. If someone is interested, I have a copy of the South Trunk Sewer Agreement for reference.

GAG

mb

MGK 4084935

(REV 8/77)

3-11-83

CEA 3805, MAIN SOUTH
TRUNK SEWER, WGK

W.C. ENGMAN 1740
E.J. FORNERIS 1740
K.W. LICHTENHELD CS7L
R.L. NELSON 1740
T.G. O'CONNEL CS7V
C.R. STEIB CS7L
J.W. DEMMITT CS6M

ATTACHED IS THE LATEST RENDITION OF THE PDR, TO REFLECT PLANT RESPONSIBILITY FOR OPERATION OF THE DEWATERING PUMPS. THE COST ESTIMATE WILL BE REVISED TO $5000K (STEIB). THE PRELIMINARY MASTER PROJECT SCHEDULE WILL BE DEVELOPED BY DEMMITT (JOHN, SEE ME ON INFO FROM DESIGN/CONSTRUCT QUOTES).

ALL OTHERS PLEASE GET YOUR COMMENTS TO ME BY 3-18-83 (ENGMAN ASAP AFTER VACATION). THIS VERSION IS GOING INTO THE WANG TODAY.

I'D LIKE TO HAVE THE STRATEGY MEETING BY 3-25-83 (ENGMAN'S IMPUTS ARE KEY TO THIS DATE).

THANKS!

BRYAN. SEUEY

WGK 4084949

Appropriation Project Definition Report

CEA 3808

Main South Trunk Sewer

Monsanto Chemical Intermediates Company

WG Krummrich Plant

March 28, 1983
~~August 4, 1982~~

Approved By

B. J. Sevey
Project Manager

R. L. Wiese
Manager, ~~MCI~~ MIC Engineering

R. L. Nelson
Manufacturing Representative

W. L. Smull
General Superintendent, TSD.

WGK 4084950

CEA 3808

MAIN SOUTH TRUNK SEWER

APPROPRIATION
PROJECT DEFINITION REPORT

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OPERATING COMPANY AND CORPORATE DEPARTMENTS

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27.	R.E. Witter/G. OSTROOT JR.	F2WA

V.T. MATTEUCCI B2SC
M.R. FORESMAN G4WA

WGK 4084951

CEA 3808 - MAIN SOUTH SEWER

APPROPRIATION PROJECT DEFINITION REPORT

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WGK 4084952

I. Project Synopsis

This project will provide a new 42 inch diameter, Monsanto owned, trunk sewer to carry all the plant sewer load now carried by the two Sauget Village sewers. The two existing village sewers are in a very deteriorated condition due to the high acidity of the plant wastes, and require extensive repairs. Repair of the village sewers will be the responsibility of the village.

The new sewer will combine most plant sewer loads into one discharge point where sampling and measuring devices will be provided. The exceptions are sulfuric acid manufacturing, the laboratory and Lot A which discharge into the village sewer on the north side of the plant. The existing south plant sewer system has about nineteen discharge points into the village sewer.

II. Project Results and Commitments

A. Project Results Statements and Priorities

The major result to be realized from this project is to provide a reliable acid proof sewer to handle the plant sanitary, storm and process discharges. This will isolate Monsanto's discharges from the other industrial and residential area wastes and provide a single Monsanto discharge which will be monitored.

During project execution cost will be of first priority over improved project timing. Careful planning is required to minimize impact on plant production and maintenance.

B. Products, Capacity and Raw Materials

1. Products - Not applicable.

2. Capacity - The existing South Trunk Sewers are discharging approximately 27 cfs (12,000 GPM) flowing full. These sewers carry approximately 95% of the main plant discharge.

II. Project Results and Commitments - continued

The new South Trunk Sewer is planned to be ~~a~~ 42 ~~in diameter~~ and has a theoretical capacity of 45 cfs (20,000 GPM) at 0.2% slope. For a flat site, such as the W. G. Krummrich Plant, it ~~could~~ be assumed that as much as an inch of rain accumulates before runoff ~~would~~ begins. On this basis, the 42 inch sewer would have sufficient capacity to handle a 5 year frequency storm with a 15 minute duration.

The village system downstream from Monsanto's discharge consists of a 42" ∅ sewer under Route 3 and two (2) 36" ∅ sewers from west of Route 3 to the treatment plant.

The flume will be designed to accurately measure flows between 3000 and 8,000 GPM.

3. Raw Materials - Not applicable.

C. Manning, Operability and Maintainability

Sewer construction will be aimed at minimizing maintenance. The sewer will be extra strength vitrified clay tile encased in reinforced concrete to maintain the integrity of the furan resin acid proof joint cement. Manholes will be reinforced concrete with acid proof brick lining. Manholes will be provided at each direction change to provide for easy inspection and cleaning.

Plant manpower will not be effected by this project.

D. Utilities and Energy Conservation

The ~~only~~ utility requirements for this project is electrical power used for heating, ventilating and lighting the sampling house and operating the sampler (Approximately 5kw maximum), and power to operate deep well dewatering pumps (about 4 pumps at 25HP each).
"Product Energy Rate" does not apply to this project.

"Energy and Utility Costs for Evaluating Project Capital Alternates" do not apply to this project.

Plant Maintenance personnel will be required to maintain the deep well dewatering pumps and controls, and they will need to move pumps from deep well to deep well as sewer construction progresses.

II. Project Results and Commitments - continued

E. Control of Hazards and Environment

1. Control of Hazards

No new hazards are associated with this project. The composition of the plant effluents are not changed by this project. Prevention of explosive mixtures in the sewer vapor space is currently accomplished at the points of entrance into the plant sewer system and is unchanged oy this project.

2. Employe Exposure to Hazardous Materials

This project will not change employe exposure. The sample house will be provided with forced ventilation for use when employes are in the building.

3. Environment

This project will reduce the load on the existing village sewers during heavy rainfalls and help to alleviate upstream flooding which occurs from time to time now. (OF THE PLANT AND THE VILLAGE,

4. Noise

Plant and community noise levels will not be affected.

III. Project Premises

A. Site Location Premises

The new sewer will run westward, roughly following the plant's 5th street from south of building BBO to the village sewer box just east of State Route 3. The new sewer will be north of the two existing village sewers.

Soil conditions vary greatly and are expected to be unstable. Most excavated soil will be unsuitable for backfill. Some soil will be chemically contaminated and must be disposed of per established plant procedures. The ground water level is high and fluctuates widely depending on types of soil encountered, the Mississippi River level and rainfall.

WGK 4084955

III. Project Premises - continued

B. Process Premises

Not applicable.

C. Ex-Project Utility Premises

Required utilities can be provided from existing plant sources.

D. Ex-Project Waste Treatment

The new plant sewer will discharge into the Sauget Village sewer system east of State Route 3, as it presently does, and be carried westward to the Sauget Physical/Chemical Treatment Plant for treatment before discharge into the Mississippi River. In the future, after primary/chemical treatment, the effluent will go to the American Bottoms Regional Treatment Facility, expected to be operational ~~in 1986,~~ for secondary treatment IN 1986.

E. Ex-Project Service Premises

No new service facilities are needed to support this project.

F. Related Projects

~~A plant project for dismantling building BI, which sits over the sewer routing, needs completion prior to start of new sewer construction.~~

Is BI STILL PART OF THIS PROJECT?

~~Approval of~~ CEA 3741, ACL waste pre-treatment ~~is~~ HAS BEEN APPROVED. ~~indeterminant. The final disposition/D~~esign of this project ~~has a direct effect on the branch sewers and manholes required on this project (CEA 3808), or vice versa. This project takes into account current plans for CEA 3741. There is possibility of change.~~ WILL BE INFLUENCED BY DESIGN IN PROGRESS OR COMPLETED ON CEA 3741.

G. Permits and License Requirements

No discharge permits are required since the new sewer is a replacement sewer and no increase in flow or pollutant loading to the municipal system will result.

WGK 4084956

III. Project Premises - continued

Infringements of Village of Sauget right-of-ways must be negotiated with the village by the Plant.

IV. Project Risks

A. Technical Risks

Technical risks are considered minimal on the project. Design and construction will take into account experiences gained on CEA 3088 which replaced many of the main plant sewers.

B. Environmental Risks

This project is not expected to significantly change any environmental risk. This project will reduce the load on the existing Village of Sauget sewers upstream of Monsanto's discharge. Village sewer loading downstream of Monsanto's discharge will remain the same as it is now.

C. Vulnerability

This project is considered vulnerable to capital and expense deviations since deep excavations will be subject to flooding due to unpredicatable weather, ~~and~~ high ground water levels and unstable soils. A high percentage of soil (if not all) will be unsuitable for backfill. An unknown ~~but considered large~~, quantity of soil will be chemically contaminated and will require controlled disposal. ~~In preparing the capital estimate conservative estimating factors and higher than normal contingency allowances should be considered to prevent the risk of significant cost overruns.~~ This project has been developed with consultation from Gampco (contractor for Queeny spill control project CEA 3189). However, poor soil conditions and tne extent of ground water dewatering cannot be better quantified without extensive soil testing and actual dewatering tests.

D. Likelihood of Changes in Definition WGK 4084957

No significant changes in project definition are anticipated.

PROJECT STRATEGY CALLS FOR THE PLANT TO BE RESPONSIBLE FOR MAINTAINING GROUND WATER BELOW THE LEVEL SEWER CONSTRUCTION ELEVATIONS. CONSTRUCTION TRADE UNIONS COULD OBJECT TO THIS STRATEGY. COST FOR UNION LABOR TO MAN THE DEEP WELL PUMPS, SHOULD A JURISDICTIONAL DISPUTE BE LOST BY MONSANTO, IS IN THE MAGNITUDE OF $1000K.

IV. Project Risks - continued

B. Execution Risks

Soils - A wide variety of soils are expected. Seventy-five percent of the soil is expected to be of poor quality for use as backfill. A ~~large~~ portion may be contaminated and require special handling and disposal. Excavations will be deep and require extensive shoring. Where soils are particularly unstable or excavation is ajacent to important structures, sheet piling may be required.

Ground Water - Extensive dewatering is required. Assuming ~~200'~~ 100' of open ditch, ~~five~~ ALL THREE 8" ∅ wells at 50' intervals, 60' depth and pumps at 25 hp each, may be required. ~~Two men are required to man the pumps 24 hours/day.~~ Wells will have to be drilled along the entire route ~~as construction progresses.~~ Acidity of ground water may be high in some areas. Acid resistant pumps should be used.

The risk of subsidence exists. Test wells, or piezometers, are required to monitor and restrict draw down to a reasonable limit to protect existing structures, including the existing village sewers. Migration of contaminated water from the existing sewers is a possibility.

Acid Proof System - Integrity of the new sewer acid proof system will be the lump sum contractors risk. However, Monsanto ~~must~~ IT IS MANDATORY THAT continually inspect quality.

Underground Obstructions - Underground obstructions and utilities are apt to be encountered. A thorough drawing investigation will be conducted but the risk remains. DURING DESIGN,

Project Description

A. Facility Description

The new sewer will, in general, be parallel and north of the two existing village south trunk sewers. About 1660 lineal feet of 42 inch diameter main trunk sewer pipe will be required. Also, several smaller branch sewers are needed to tie into existing sewers.

WGK 4084958

V. Project Description - continued

Construction will be of extra strength vitrified clay tile encased in reinforced concrete. Joints will be made with Furan resin acid proof cement. Sewer manholes and inlet boxes will be reinforced concrete, fully lined with an acid proof system. Approximately 30 will be needed, about 18 manholes, and about 12 branch inlet boxes.

Parshall flume flow measurement and liquid sampling facilities will be provided near the point of discharge into the Sauget Village sewer system.

Design and construction will conform generally with CED Master Specification for Yard Chemical Sewers - Clay Pipe A8.2 STD 3.

Two cross connections will be provided to allow the village to divert their flows to the new sewer while they repair their own. This also allows Monsanto to use the village sewers during emergency repairs. At the conclusion of such work the connection would be plugged off.

B. Plot Plans

Preliminary plot plans are included in Appendix A.

VI. Project Strategy

A. Design Strategy

Project design will be in-house by the MCI SPEO group. No pre-approval funding will be requested.

B. Construction, Checkout and Completion Strategy

Construction will be via lump sum union contractors. Separate bids will be solicited for the wells. Sewer construction will not start until the wells are operational.

Winter weather will be an adverse factor. Furan application is temperature sensitive.

WGK 4084959

VI. Project Strategy - continued

Manholes must be constructed around existing operating sewers. When appropriate the existing sewer is to be "broken out" of the new manhole and sewage allowed to flow through the new sewer. The old sewer connections would then be permanently plugged. Prior to any tie-in related sewers must be checked for hazardous gas and fluids. The plant ~~would~~ be required to flush the sewers until safe to work.

Where we cannot build around an operating sewer, by-pass pumping or siphoning between existing manholes will be required.

Some areas of construction will interfere with production, especially around some loading docks. Close coordination is required between the Plant Manufacturing Representative and Construction.

In general, overtime is not required for completion of this project.

The plant will ~~remove~~ railroad tracks from service to allow for sewer crossings. The tracks envolved can be serviced from the north end of the plant by the Terminal Railroad.

CED has existing, adaquate receiving and storage capability. ~~However, sequential delivery of some items, such as VCP may be advantageous with respect to storage and cash flow.~~

CED has existing, adaquate temporary construction facilities. A shower trailer is available.

Extensive shoring and dewatering of excavations will be a major construction factor. ~~A substantial amount of~~ Contaminated soil is expected. Such soil must be handled per plant procedures and hauled to a licensed disposal site.

Checkout (including leak testing) and start-up will be on a sequential basis. Construction will start at the Route 3 Village of Sauget collection box and proceed east. As sections are completed between major manholes they will be tested and activated. Inflatable bladders will be utilized as temporary pipe plugs.

VII. Facilities Description for Estimate, Schedule and Control

Category 01 - Equipment Items (Lichtenheld) PLANT DUPLICATED
Existing sampling equipment will be ~~relocated~~. ~~See Category 93~~. FURNISH (8) 25HP DEEP WELL PUMPS. STAINLESS STEEL.

Category 02 - Instrument Items (Harber) PLANT
Existing ultrasonic flow instrumentation will be DUPLICATED. ~~relocated~~. ~~See Category 93~~
New Parshal Flume, maximum flow 12,000 GPM. MINIMUM Accurate range 3,000 to 8,000 GPM.
DEEPWELL HIGH/LOW, STOP/START, ALARMS (8 SETS).

Category 03 - Set & Test Equipment (Lichtenheld)
~~See Category 93~~ SET AND TEST LIQUID SAMPLER.
(8) DEEP WELL PUMPS

Category 04 - Set & Test Instruments (Harber)
~~See Category 93~~ SET AND TEST NEW ULTRASONIC FLOW INDICATOR, RECORDER AND TOTALIZER. DEEP WELL CONTROLS.

Category 05 - Piling (Lichtenheld)
None required.

Category 06 - Excavation (Lichtenheld)

Excavation (for bldg. and misc.)	10 cu. yd.
Backfill, compacted	8 cu. yd.

(35) 60' DEEP WELLS

Category 07 - Foundations (Lichtenheld)

Building slab	2 cu. yd.

Category 08 - Supports, Platforms & Structures (Lichtenheld)
None required.

Category 09 - Other Building Items (Lichtenheld)
1- 3' x 7' mandoor.
(2) 8" ∅ vent fans.

Category 10 - Sprinklers and Fire Protection (Lichtenheld)
None required.

Category 11 - Piping (Lichtenheld)
None required.

Category 12 - Ductwork (Lichtenheld)
None required.

WGK 4084961

VII. Facilities Description for Estimate, Schedule and Control - continued

Category 13 - Electrical (Harber)

1. Set 2 new poles and run about 100' of guy strand and feeder from existing meter house to new meter house for power.

2. Mount electric heater with thermostat, vent fan, new breaker panel and power for sample pump. About 50' conduit.

3. Mount 2 receptacles, 2 fluorescent fixtures, and switch for new meter house. About 50' conduit.

4. Run (2) 2" conduits underground and encased in concrete from new meter house to new manhole with flume. About 75'.

5. TEMPORARY POWER TO 35 DEEP WELLS.

Category 14 - Site Preparation (Lichtenheld)
None required.

Category 15 - Sewers, Drains, and Plumbing (Lichtenheld)

Excavation	20,000 c.y.
Backfill, compacted (in place) (75% new fill)	17,000 c.y.
3" gravel areas	260 tons
Sewers, VCP (extra strength)	
42"Ø	1,660 L.F.
24"Ø	40 L.F.
18"Ø	25 L.F.
15"Ø	235 L.F.
12"Ø	425 L.F.
8"Ø	300 L.F.
6"Ø	90 L.F.
Concrete encasement, 2 pour, reinforced per Spec. ~~AS-2 STD 9,~~ Figure 5	1,660 c.y.
Concrete ~~manholes~~, curb inlets, trench	630 c.y.
C.I. frames and grates, heavy duty	30 ea.
Galvanized trench grating, 1"	20 S.F.
Acid brick, for manholes, with Furan joints	11,000 S.F.
Fill 1/4" space behind acid brick with molten sulfur	
Asphalt membrane, outside surface of manholes	15,000 S.F.
Asphalt membrane, fiber reinforced	11,000 S.F.

WGK 4084962

VII. Facilities Description for Estimate, Schedule and Control - continued

Sewer plugs, concrete with acid brick	40 ea.
Fiberglass coating on underside of manhole lids	900 S.F.
Sheeting, timber	20,000 S.F.
Sheet piling MP 112, 15' embedment	14,000 S.F.
Structural steel wales and struts reuse 100' sections	8 tons
Purchase steel piling	7,600 S.F.
"Cage" sheeting	1,700 F.L.

Category 16 - Underground Piping (Lichtenheld)
None required.

Category 17 - Yards, Roads and Fencing (Lichtenheld)

NONE REQUIRED

Excavation	150 c.y.
Curb removal	600 L.F.
Remove existing asphalt paving	1,200 s.y.
Backfill, compacted (in place) (75% new fill)	300 c.y.
Asphalt paving, 3" asphalt and 9" gravel	800 s.y.
Curbs, WGK std. (modified A8.3 STD 9, Figure 3)	760 L.F.
Replace asphalt paving (road)	1,400 s.y.
Fencing, vinyl clad, with 3 strands barb wire and 2 locked 3' gates	30 L.F.

Category 18 - Railroads (Lichtenheld)

Steel rail crossing (30 L.F. with switch)	1 ea.
Rail crossing removal (timber) 9' x 80 L.F.	2 ea.

Category 19 - Insulation - (Lichtenheld)
None required.

Split face block

Category 20 - Painting - (Lichtenheld)
Paint 8 x 8 x 8 concrete block building per Monsanto standards:
Inside - K1.3 STD. P4
Outside - K1.3 STD. P5

Category 21 - Walls, Masonry Roofs & Roofing (Lichtenheld)
8' x 8' x 8' high concrete block building with 4" poured concrete roof.

Category 22 - Spares (Lichtenheld)
None required.

WGK 4084963

Notes to estimator (Estock)

Categories 50, 51, 53, 55, 58 & 67 (By Murphy, ~~Estock~~ STEIB)
Work up from "zero base" indirects estimate.

Category 80 - Engineering
Work up from manhour and travel estimate from each discipline.

Category 81 - Outside Engineering
Provide allowance for outside consultation (~~Say~~ $20k).

Category 90 - Dismantling
Provide an allowance for unknowns. Dismantle the existing CED fab shop.

Category 91 - Sales and Use Taxes (~~Estock~~ STEIB)

Category 92 - Repairs Expense
Normal allowance.

Category 93 - Relocation & Modification Expense (Harber, Lichtenheld, Estock)
Relocate existing liquid sampler.
Relocate existing flow instrumentation.
Allowance to relocate underground obstructions.

Category 94 - Startup Relocation & Modification Expense
~~Put the following in capital categories as distinct items~~
Provide allowances for plugging off sewers and pumping or siphoning around sewer sections during tie-ins.
Provide allowance for Hydrostatic testing. MOVE TO CAT 15
Provide Dewatering wells ~~and~~ operating costs By Plant at #100k (~~Note: Put expected dewatering in capital category such as Category 15. Allowance for extraordinary dewatering (risk items) should have allowances in undeveloped design. This includes highly acidic pumping~~).

Expense - use an allowance.

WGK 4084964

Monsanto

FROM (NAME—LOCATION—PHONE): G. Ostroot, Jr. (6073) S&PP - St. Louis (Mail Zone F2WA)

DATE: July 20, 1982

SUBJECT: Pre-Project Loss Prevention Report 82-21 CEA 3808 Mains South Trunk Sewer

REFERENCE: W. G. Krummrich

TO:

Mr. B. J. Sevey
Project Manager - CS7L

cc: R. A. Brooks - F2WB
P. E. Heisler - 1740
H. M. Keating - G4WA
M. L. Mullins - F3EA
J. E. Rodgers - F3EA
G. L. Smith - F3EA
R. E. Witter - F2WA
S&PP Location File - WGK
S&PP Project File - 3808

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J. F. Giblin - F3EB
K. W. Lichtenheld - CS7L
R. L. Nelson - 1740
T. G. O'Connell - CS7V
G. Ostroot, Jr. - F2WA
S. D. Paul - G2WA
B. J. Sevey - CS7L
S. D. Smith - 1740
D. L. Wasson - CS7V

DATE AND PLACE OF MEETING: July 8, 1982, Creve Coeur, Missouri.

This project will provide a new 42 inch diameter, Monsanto owned, trunk sewer to carry all the plant sewer load now carried by two Sauget Village sewers. Project cost is in the $4.0 - 5.0M range.

1. Breaking Into Existing Sewers — Prior to breaking into any existing sewer lines, sampling and analyses for flammable vapors in the air in the sewer will be made on both sides of the break-in point. Detection of flammable vapors will require sewer flushing and retesting before the break-in will be made.

2. Potential Damage to Existing Facilities — Extensive dewatering of soil will be required for the installation of the sewer line at an average depth of 15 feet with a water level depth of about five feet. The effects of this dewatering on the stability of adjacent building and tank foundations and on the adjacent village sewers need to be closely monitored to minimize damage.

WGK 4084965

IN . 10 (EL. 8 77)

RISK EVALUATION

This project incurs the potential for construction-induced damage to existing village sewers and plant building and tankage, with a probable maximum loss estimate of $500,000 in property damage and business interruption loss.

LOSS PREVENTION CHECKLIST

Attached to Mr. Sevey's copy of this report are copies of Form G-1425, Loss Prevention Review and Form EC-27, Environmental Control Checklist, which should be considered for this project.

LOSS PREVENTION REVIEW BY PLANT

Loss experience with any facility will depend in part on the adequacy of design and the quality of protection and loss prevention provisions. S&PP will provide continuing consultation as the project progresses but is not staffed to review construction and detailed drawings. The Manager of the loss prevention function in the plant is requested to review design drawings and construction to assure that needed loss prevention and protection facilities are provided and properly installed.

SAFETY MANAGER

George Ostroot, Jr. will be Safety Manager for this project.

The project manager should arrange a loss prevention design review including plant safety personnel, as soon as sufficient details are available.

George Ostroot Jr.

George Ostroot, Jr.

ab
Attachment

B. Sevey
K. Lichtenberg
J. Smith
B. Engman
D. Nelson

CEA - 3808

So. Sewer Trunk Line

Present Flows — $\frac{12000 \text{ Gal/min}}{500}$ = 24 cfs

Check 42" Dia. Sewer — Is it Sufficient?
Ken & Dick will Check
Timing: — 6/24/82

Monitoring/Sampling House: Heated & Ventilated

Flow Sampler -
Transducer -
Flow Recorder -
Totalizer

D. Nelson - Plant Commitment To BI Storage Remova

Check Need of 42" over 36" West of Dept. 255
Ken & Dick.

WGK 4084967

Monsanto

FROM (NAME—LOCATION—PHONE): B. J. Sevey CS7L Corporate Engineering (4-6913)

DATE: June 28, 1982

cc: F. A. Mayse - CS7L
W. L. Smull - 1740
R. L. Wiese - CS7R

SUBJECT: CEA 3808 - MAIN SOUTH TRUNK SEWER, W.G.K., LP & EC REVIEW

REFERENCE:

TO:
W. C. Engman - 1740
[redacted] Forneris - 1740
J. F. Giblin - F3EB
H. M. Keating - G4WA
K. W. Lichtenheld - CS7L
R. L. Nelson - 1740
G. Ostroot - F2WA
S. D. Paul - G2WE
R. Sinise - 1740
S. D. Smith - 1740
K. Storms - 1740
D. L. Wasson - CS7V
M. F. Weishaar - G4WA

Attached is the preliminary PDR for CEA 3808 for your use at the pre-project LP & EC review to be held 9 A.M., July 8, 1982 in Room F-419 of "F" Building at the General Offices.

B. J. Sevey

BJS/kh

Attachment

P.S. I'd like any comments on accuracy, typographical or project content.

WGK 4084968

IN - 10 (REV. 8/77)

Preliminary Project Definition Report

CEA 3808

Main South Trunk Sewer

Monsanto Chemical Intermediates Company

WG Krummrich Plant

June 25, 1982

Approved By

B. J. Sevey Project Manager	R. L. Wiese Manager MCI Engineering
R. L. Nelson Manufacturing Representative	W. L. Smull General Superintendent, TSD.

WGK 4084969

CEA 3808

MAIN SOUTH TRUNK SEWER

PRELIMINARY
PROJECT DEFINITION REPORT

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27.	R.E. Witter	F2WA

WGK 4084970

CEA 3808 - MAIN SOUTH SEWER

PRELIMINARY PROJECT DEFINITION REPORT

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WGK 4084971

I. Project Synopsis

This project will provide a new 42 inch diameter, Monsanto owned, trunk sewer to carry all the plant sewer load now carried by the two Sauget Village sewers. The two existing village sewers are in a very deteriorated condition due to the high acidity of the plant wastes, and require extensive repairs. Repair of the village sewers will be the responsibility of the village.

The new sewer will combine most plant sewer loads into one discharge point where sampling and measuring devices will be provided. The exceptions are sulfuric acid manufacturing, the laboratory and Lot A which discharge into the village sewer on the north side of the plant. The existing south plant sewer system has about nineteen discharge points into the village sewer.

II. Project Results and Commitments

A. Project Results Statements and Priorities

The major result to be realized from this project is to provide a reliable acid proof sewer to handle the plant, sanitary, storm and process, discharges. This will isolate Monsanto's discharges from the other industrial and residential area wastes and provide a single Monsanto discharge which will be monitored. Flows in the village sewers will be reduced so that during heavy rains flooding upstream, in Sauget Village residential areas, will be reduced.

Upstream Light Only

During project execution cost will be of first priority over improved project timing.

B. Products, Capacity and Raw Materials

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1. Products - Not applicable.

2. Capacity - The existing South Trunk Sewers are discharging approximately 27 cfs (12,000 GPM) flowing full. These sewers carry approximately 95% of the main plant discharge.

   The new South Trunk Sewer is planned to be a 42 in. diameter and has a theoretical capacity of 45 cfs (20,000 GPM) at 0.2% slope. For a flat site such as the W. G. Krummrich Plant; it could be assumed that as much as an inch of rain accumulates before runoff would begin. On this basis, the 42 inch sewer would have sufficient capacity to handle a 5 year frequency storm with a 15 minute duration.

II. Project Results and Commitments - continued

The village system downstream from Monsanto's discharge consists of a 42" Ø sewer under Route 3 and two (2) 36" Ø sewers from west of Route 3 to the treatment plant.

The flume will be designed to accurately measure flows between 3000 and 8,000 GPM.

3. Raw Materials - Not applicable.

C. Manning, Operability and Maintainability

Sewer construction will be aimed at minimizing maintenance. The sewer will be extra strength vitrified clay tile encased in reinforced concrete to maintain the integrity of the furan resin acid proof joint cement. Manholes will be reinforced concrete with acid proof brick lining. Manholes will be provided at each direction change to provide for easy inspection and cleaning.

Plant manpower will not be effected by this project.

D. Utilities and Energy Conservation

The only utility requirement for this project is electrical power used for heating, ventilating and lighting the sampling house and operating the sampler. (Approximately ____kw maximum.)

"Product Energy Rate" does not apply to this project.

"Energy and Utility Costs for Evaluating Project Capital Alternates" do not apply to this project.

E. Control of Hazards and Environment

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1. Control of Hazards

No new hazards are associated with this project. The composition of the plant effluents are not changed by this project. Prevention of explosive mixtures in the sewer vapor space is currently accomplished at the points of entrance into the plant sewer system and is unchanged by this project.

2. Employe Exposure to Hazardous Materials

This project will not change employe exposure. The sample house will be provided with forced ventilation for use when employes are in the building.

E. Control of Hazards and Environment - continued

3. Environment

This project will reduce the load on the existing village sewers during heavy rainfalls and help to alleviate upstream flooding which occurs from time to time now.

4. Noise

Plant and community noise levels will not be affected.

III. Project Premises

A. Site Location Premises

The new sewer will run westward, roughly following the plant's 5th street from south of building BBO to the village sewer box just east of State Route 3. The new sewer will be north of the two existing village sewers.

Soil conditions vary greatly and can be unstable. Some excavated soil may be unsuitable for backfill. The ground water level is high and fluctuates widely depending on types of soil encountered, the Mississippi River level and rainfall.

B. Process Premises

Not applicable.

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C. Ex-Project Utility Premises

Required utilities can be provided from existing plant sources.

D. Ex-Project Waste Treatment

The new plant sewer will discharge into the Sauget Village sewer system east of State Route 3 and be carried westward to the Sauget Physical/Chemical Treatment Plant for treatment before discharge into the Mississippi River. In the future, after primary/chemical treatment, the effluent will go to the American Bottoms Regional Treatment Facility, expected to be operational in 1986, for secondary treatment.

E. Ex-Project Service Premises

No new service facilities are needed to support this project.

F. Related Projects

A plant project for dismantling building BI, which sits over the sewer routing, needs completion prior to start of new sewer construction.

CEA 3741, ACL waste pre-treatment is expecting approval in July, 1982. The final disposition/design of this project has a direct effect on the branch sewers and manholes required on this project (CEA 3808). This project takes into account current plans for CEA 3741. There is possibility of change.

G. Permits and License Requirements

No discharge permits are required since the new sewer is a replacement sewer and no increase in flow or pollutant loading to the municipal system will result.

Infringements of Village of Sauget right-of-ways must be negotiated with the village by the Plant.

IV. Project Risks

A. Technical Risks

Technical risks are considered minimal on the project. Design and construction will take into account experiences gained on CEA 3088 which replaced many of the main plant sewers.

B. Environmental Risks

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This project is not expected to significantly change any environmental risk. This project will reduce the load on the existing Village of Sauget sewers thus help aleviate potential overload problems during heavy rainfalls.

C. Vulnerability

This project is considered vulnerable to capital deviations since deep excavations will be subject to flooding due to unpredicatable weather and high ground water levels and unstable soils. In preparing the capital estimate conservative estimating factors and higher than normal contingency allowances should be considered to prevent the risk of significant cost overruns. These undefinable costs should be carried as undeveloped design allowances.

D. Likelihood of Changes in Definition

No significant changes in project definition are anticipated.

E. Execution Risks

Soils - A wide variety of soils are expected. Much soil is expected to be of poor quality for use as backfill. Some may be contaminated and require special handling. Excavations will be deep and require extensive shoring. Where soils are particularly unstable or excavation is ajacent to important structures, sheet piling may be required.

Collapse of existing sewer as result of water table drawdown

Ground Water - Extensive dewatering is required. Assuming 200' of open ditch, five 8" ∅ wells at 50' intervals, 50' depth and pumps at 25 hp each, may be required. Two men are required to man the pumps 24 hours/day. Wells will have to be drilled along the entire route as construction progresses. Acidity of ground water may be high in some areas.

The risk of subsidence exists. Test wells are required to monitor and restrict draw down to a reasonable limit.

Acid Proof System - Integrity of the acid proof system will be the lump sum contractors risk. However Monsanto must continually inspect quality.

Underground Obstructions - Underground obstructions and utilities are apt to be encountered. A thorough drawing investigation will be conducted but the risk remains.

V. Project Description

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A. Facility Description

The new sewer will, in general, be parallel and north of the two existing village south trunk sewers. About 1600 lineal feet of 42 inch diameter main trunk sewer pipe will be required. Also, several smaller branch sewers are needed to tie into existing sewers.

Construction will be of extra strength vitrified clay tile encased in reinforced concrete. Joints will be made with Furan resin acid proof cement. Sewer manholes and inlet boxes will be reinforced concrete, fully lined with an acid proof system. Approximately 22 will be needed, about 16 manholes, and about 6 branch inlet boxes.

A. Facility Description - continued

Parshall flume flow measurement and liquid sampling facilities will be provided near the point of discharge into the Sauget Village sewer system.

Design and construction will conform generally with CED Master Specification for Yard Chemical Sewers - Clay Pipe A8.2 STD 3.

A cross connection will be provided at the upstream end of the new sewer to allow the village to divert their flows to the new sewer while they repair their own. At the conclusion of such work the connection would be plugged off.

B. Plot Plans

Preliminary plot plans are included in Appendix A.

VI. Project Strategy

A. Design Strategy

Project design will be in-house by the MCI SPEO group. No pre-approval funding will be requested.

B. Construction, Checkout and Completion Strategy

Construction will be via lump sum union contractors.

Winter weather will be an adverse factor. Furan application is temperature sensitive.

Manholes must be constructed around existing operating sewers. When appropriate the existing sewer is to be broken out of the new manhole and sewage allowed to flow through the new sewer. The old sewer connections would then be permanently plugged.

Where we cannot build around an operating sewer, by-pass pumping between existing manholes will be required.

Some areas of construction will interfere with production, especially around some loading docks. Close coordination is required between the Plant Manufacturing Representative and Construction.

In general, overtime is not required for completion of this project.

B. Construction, Checkout and Completion Strategy -continued

CED has existing, adaquate receiving and storage capability. However, sequential delivery of some items, such as VCP may be advantageous with respect to storage and cash flow.

CED has existing, adaquate temporary construction facilities.

Extensive shoring and dewatering of excavations will be a major construction factor.

Checkout (including leak testing) and start-up will be on a sequential basis. Construction will start at the Route 3 Village of Sauget collection box and proceed east. As sections are completed between major manholes they will be tested and activated. Inflatable bladders will be utilized as temporary pipe plugs.

VII. FACILITIES DESCRIPTION FOR ESTIMATE, SCHEDULE AND CONTROL

Category 01 - Equipment Items (Lichtenheld)
Existing sampling equipment will be relocated. See Category 93.

Category 02 - Instrument Items (Harber)
Existing ultrasonic flow instrumentation will be relocated. See Category 93
New Parshal Flume maximum flow 12,000 GPM. Accurate range 3,000 to 8,000 GPM.

Category 03 - Set & Test Equipment (Lichtenheld)
See Category 93

Category 04 - Set & Test Instruments (Harber)
See Category 93

Category 05 - Piling (Lichtenheld)
None required.

Category 06 - Excavation (Lichtenheld)

Excavation (for bldg. and misc.)	10 cu. yd.
Backfill, compacted	8 cu. yd.

Category 07 - Foundations (Lichtenheld)

Building slab	2 cu. yd.

Category 08 - Supports, Platforms & Structures (Lichtenheld)
None required.

Category 09 - Other Building Items (Lichtenheld)

Insulated	1 each
1- 3' x 7' mandoor, (2) 8" ø vent fans	

Category 10 - Sprinklers and Fire Protection (Lichtenheld)
None required.

Category 11 - Piping (Lichtenheld)
None required.

Category 12 - Ductwork (Lichtenheld)
None required.

Category 13 - Electrical (Harber)

1. Set 2 new poles and run about 100' of guy strand and feeder from existing meter house to new meter house for power.
2. Mount electric heater with thermostat, vent fan, new breaker panel and power for sample pump. About 50' conduit.
3. Mount 2 receptacles, 2 fluorescent fixtures, and switch for new meter house. About 50' conduit.
4. Run (2) 2" conduits underground and encased in concrete from new meter house to new manhole with flune. About 75'.

Electrical material	$3500
(Does not include underground conduit.)	

Category 14 - Site Preparation (Lichtenheld)
None required.

Category 15 - Sewers, Drains, and Plumbing (Lichtenheld)

Excavation	13,500 c.y.
Backfill, compacted (in place)	11,000 c.y.
3" gravel areas	200 tons
Sewers, VCP (extra strenght)	
42"ø	1,600 L.F.
24"ø	20 L.F.
18"ø	25 L.F.
15"ø	235 L.F.
12"ø	355 L.F.
8"ø	300 L.F.
6"ø	90 L.F.
Concrete encasement, 2 pour, reinforced per Spec. A8.2 STD 9, Figure 5	1,600 c.y.
Concrete manholes, curb inlets, trench	500 c.y.
C.I. frames and grates, heavy duty	27 ea.

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Galvanized trench grating, 1"	20	S.F.
42" flume, 1 ea.	$7,500	
Acid brick, for manholes, with Furan joints	8,500	S.F.
Fill 1/4" space behind acid brick with sulfur		
Asphalt membrane, inside and outside manholes	22,000	S.F.
Sewer plugs, concrete	21	ea.
Fiberglass coating on underside of manhole lids	700	S.F.
Sheeting, timber	70,000	S.F.
Sheet piling MP 112, 15' embedment	35,000	S.F.
Structural steel wales and struts reuse 200' sections (5 times)	8	tons

Category 16 - Underground Piping (Lichtenheld)
None required.

Category 17 - Yards, Roads and Fencing (Lichtenheld)

Excavation	150	c.y.
Curb removal	600	L.F.
Remove existing asphalt paving	1,200	s.y.
Backfill, compacted (in place)	300	c.y.
Asphalt paving, 3" asphalt and 9" gravel	800	s.y.
Curbs, WGK std. (modified A8.3 STD 9, Figure 3)	760	L.F.
Replace asphalt paving (road)	1,400	s.y.
Fencing, vinyl clad, with 3 strands barb wire and 2 locked 3' gates	30	L.F.

Category 18 - Railroads (Lichtenheld)

Steel rail crossing (30 L.F. with switch)	1	ea.
Rail crossing removal (timber) 9' x 80 L.F.	2	ea.

Category 19 - Insulation - (Lichtenheld)
None required.

Category 20 - Painting - (Lichtenheld)
Paint 8 x 8 x 8 concrete block building per Monsanto standards:
Inside -
Outside -

Category 21 - Walls, Masonry Roofs & Roofing (Lichtenheld)
8' x 8' x 8' high concrete block building with 4" poured concrete roof.

Category 22 - Spares (Lichtenheld)
None required.

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Notes to estimator (Estock)

Categories 50, 51, 53, 55, 58 & 67 (By Murphy, Estock)
Work up from "zero base" indirects estimate.

Category 80 - Engineering
Work up from manhour and travel estimate from each discipline.

Category 81 - Outside Engineering
Provide allowance for outside consultation (Say $20k).

Category 90 - Dismantling
Provide a small allowance for unknowns. No major dismantling required.

Category 91 - Sales and Use Taxes (Estock)

Category 92 - Repairs Expense
Normal allowance.

Category 93 - Relocation & Modification Expense (Harber, Estock)
Relocate existing liquid sampler.
Relocate existing flow instrumentation.
Relocate existing CED fab shop to Lot A. (See Dwg. CX-1-A).

Category 94 - Startup Relocation & Modification Expense
Put the following in capital categories as distinct items

Provide allowances for plugging off sewers and pumping or siphoning around sewer sections during tie-ins.

Hydrostatic testing.

Dewatering wells and operating costs (Note: Put expected dewatering in capital category such as Category 15. Allowance for extraordinary dewatering [risk items] should have allowances in undeveloped design. This includes highly acidic pumping).

Expense - use an allowance.

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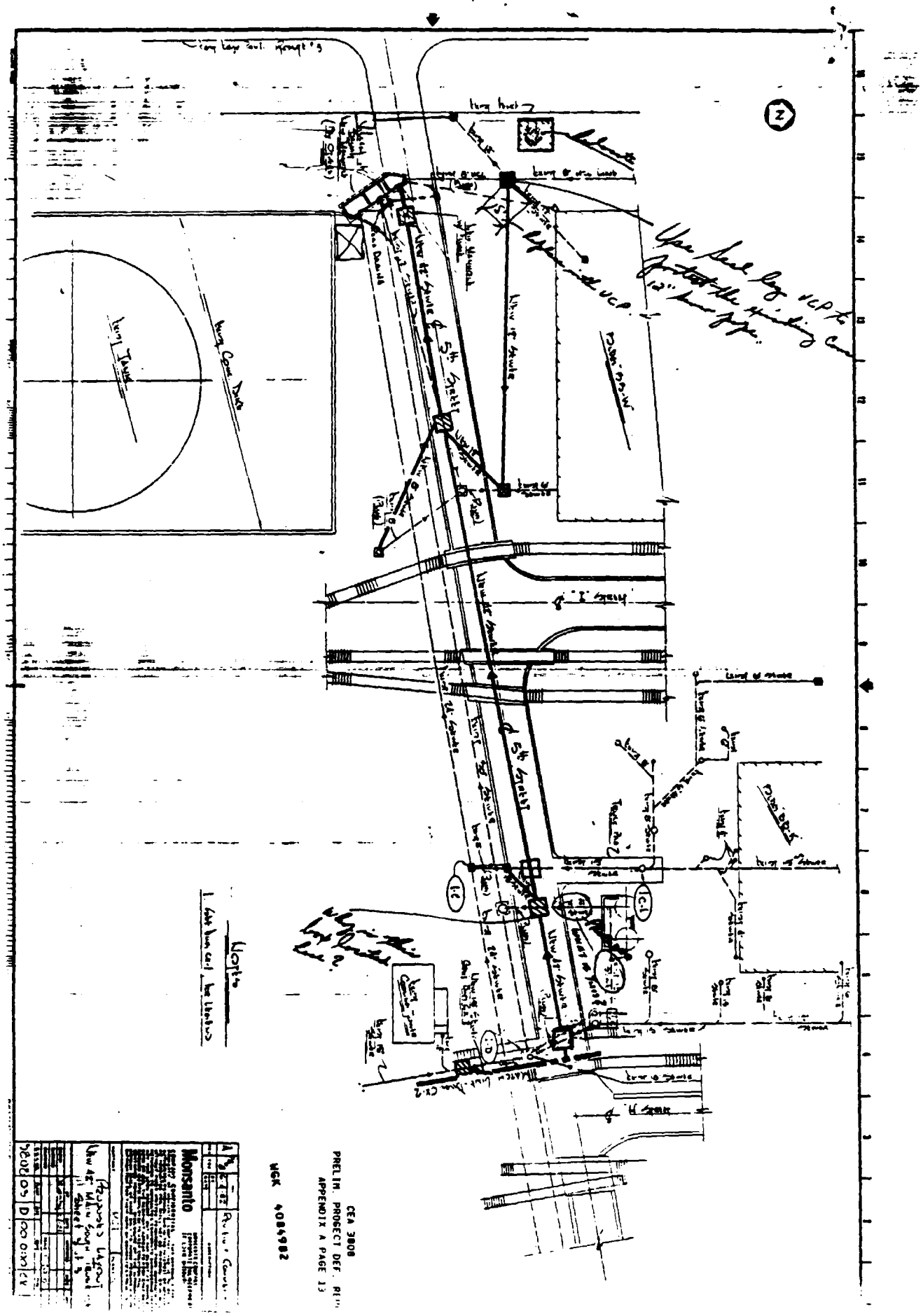

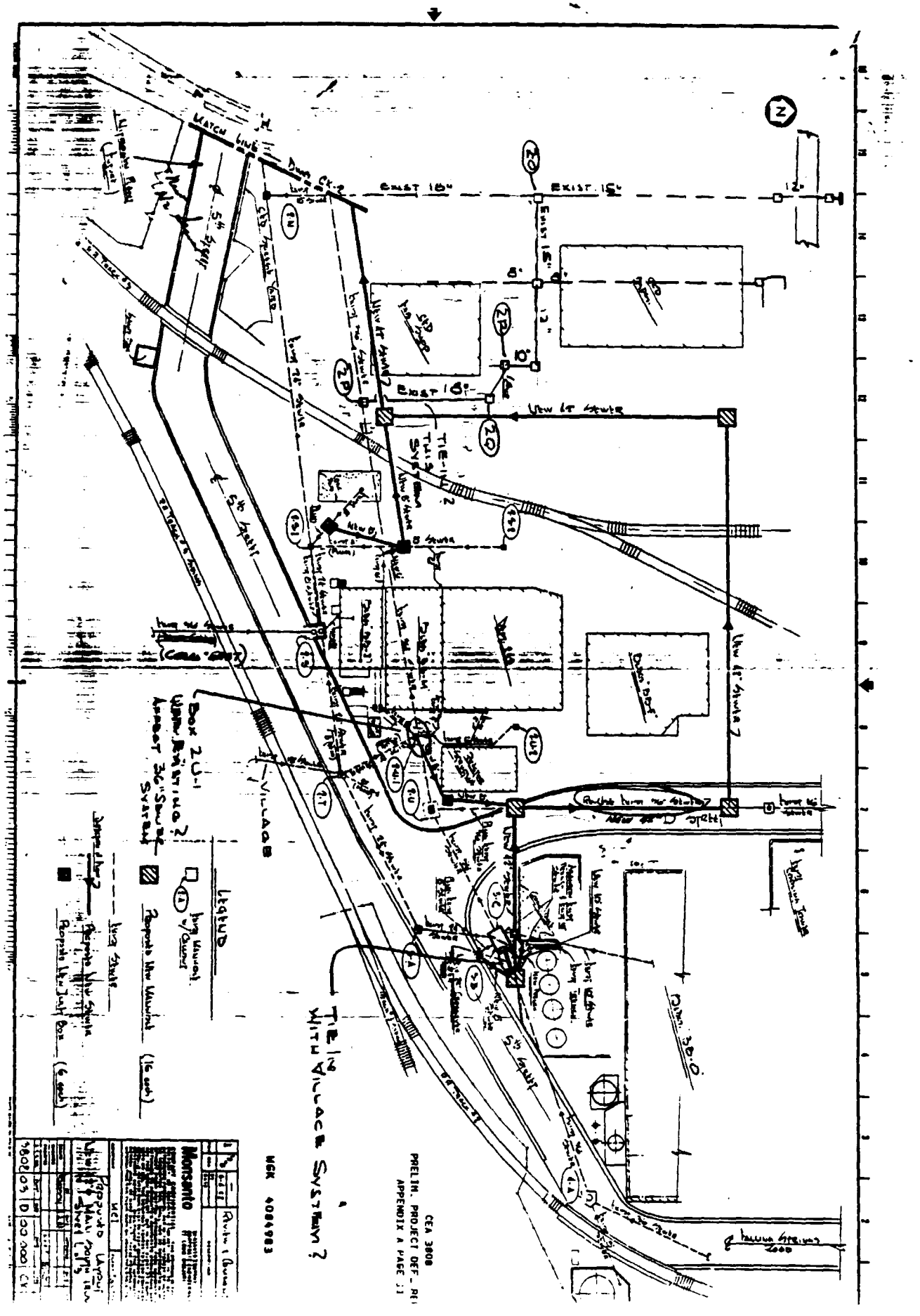
MATCH LINE
EXIST. 15"
EAST 15"
TIE-IN #2
TIE-IN #1
VILLAGE
Box 20-1
Monsanto